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Environmental Studies and Archaeology *

by G. W. DIMBLEBY

One of the most difficult problems in preparing this Inaugural Lecture has been to choose a title which was not open to misunderstanding, which was short enough, and which would allow me to cover the subject with a broad sweep. I should have liked to use the term 'Human Ecology', for it is in fact the ecology of man in the past with which I am concerned, but this term has now come to have a special meaning to sociologists and others, particularly in America, and I should have brought some people here under false pretences. Furthermore, Sir George Stapledon's posthumous book, *Human Ecology*, was published last year, and though it has stimulated my own thinking, to have used the same title would have implied a common theme, which is not the case. Human Environment, the new title of my Chair, also has its limitations as a title for a lecture because it does not imply, as the full title of the Chair does, that it is in an archaeological setting that I am studying Human Environment. Indeed, human geographers might claim that by itself this is just another name for their own subject. In order to assure them that this is not so, let us imagine that we are jointly writing a standard textbook of twelve chapters. I should like to be responsible for Chapter I, 'Early Man on the Earth', and perhaps a paragraph or two in Chapter XII, 'The World Today and Tomorrow'. All the rest I would gladly leave to my co-authors.

The rather uninspiring title I have chosen has the virtue that it allows me to treat my subject from two angles: first, Environmental Studies in Archaeology, and secondly Archaeology in Environmental Studies. This latter angle is perhaps not what I have been appointed to teach, but I regard it as a most important plank which will help to bridge the gulf which at present exists—in practice if not in theory—between archaeology and the natural sciences. As I have come to archaeology from a scientific discipline perhaps it is to be expected that I should have something to say on this theme.

First, then, let us turn to the immediate subject of my appointment: teaching and research in ecology with reference to archaeology. Archaeologists are always ready to admit how little they know about ecology, geology, pedology and all the other -ologies which are needed for a complete study of the environment. This is largely a legacy of the type of training which it has been customary for an archaeologist to receive, based on an arts or classics background and

* An Inaugural Lecture to the Chair of Human Enviromnent given at the Institute under the Chairmanship of the Director on 18th May, 1965.

with no contact at any point with the sciences. It is difficult to see how it could have been otherwise in view of the motives which have driven us to take an interest in our early ancestors and their beliefs. Today, however, this lack of environmental understanding is at least widely acknowledged and regretted, and there are indeed some archaeologists who have acquired the appropriate background of knowledge. As far as this country is concerned the credit for this change must go largely to the Institute of Archaeology. Whilst some archaeology departments in other universities have certainly encouraged their students to make contact with the teaching in other disciplines, the Institute had gone further and had made environmental studies an integral part of some of the courses. It is only to be regretted that up to the present there has been no degree course in which this pattern could be expressed. To establish environmental studies as an integral part of a degree course for archaeologists of all regional interests would indeed be a major step forward in this country.

In particular the credit for this new awareness of the importance of the environment must go to my predecessor, Frederick Zeuner, whose untimely death has left archaeology the world over greatly the poorer. Zeuner showed us how information gained about the environment from the matrix in which archaeological remains occurred could be used to put these remains into chronological context. His extraordinarily wide knowledge, in which he showed a grasp of complex problems which was often disconcerting—to say the least—to experts in fields which were not his own, enabled him to co-ordinate data of widely different nature in a way which no other one person has done. It is probably true to say that he thought of himself primarily as a chronologist and his studies of the environment were usually made with this end in view. As physics and chemistry are gradually providing new and ever more abstruse methods of establishing dates, this aspect of environmental studies is becoming progressively more difficult for mere mortals to understand—let alone teach. This divergence is one which archaeology will have to take steps to meet both at research and teaching level. Zeuner's talent was invaluable here, but I, a botanist by training, could not even attempt to follow in his footsteps. Fortunately for me he has left some dedicated disciples in the Department upon whom I am able to depend with complete confidence for the teaching and supervision in those subjects which he covered and which are outside my experience. Curiously enough, Zeuner always felt that one field which he could not cover was botany—though in view of his authoritative writings on the origins of the cultivated plants he was certainly no mean botanist. I can only assume that he just did not have the time to devote to botany.

My own contribution must lie primarily in the field of the ecological relationships between man and his surroundings. It must be appreciated that

the environment was not just the setting in which man lived; by living in it he inevitably modified it, and in turn the modified environment might affect the way he lived. For instance, man could destroy his forest surroundings, sometimes accidentally, sometimes deliberately, but in the resulting open country he might find that the lack of shelter would make him modify his way of life. Or again, man frequently brought about soil deterioration, and this in turn would limit the use he could make of the land for agriculture. I will return to this concept of the environment as a dynamic system in which man is inextricably bound up, but for the moment I will only make the further point that such a system could have operated under all conditions of climate, geography, vegetation or soil, though the actual outcome would vary widely in different circumstances.

So far the development of archaeology has centred primarily upon man himself and his cultural achievements; its methods have been mainly comparative studies of his artifacts—particularly of the relatively indestructible things he has left behind: his earthworks, buildings, weapons and the utensils which he used. In the methods of study and in the material studied archaeology has been typically an arts subject. What above all else has made it so has been its focus on man and his cultural development. If, however, the point of focus is changed, so that the object of study is the world in which man lived, and still lives, then the subject becomes a science comparable with geology, anthropology or ecology. After all, the research methods employed in an arts subject, in so far as they involve observation, comparison and logical deduction, are also common to science. It might be argued that experiment is an essential part of scientific method, but it is apparent that some subjects lend themselves to experiment much more readily than others. There are eminent geologists who have never done an experiment in their lives but their standing as scientists is not in question. Even this criterion, however, has lost its force as applied to archaeology, for under the aegis of the British Association for the Advancement of Science elaborate field experiments in archaeology have recently been set up.

It would be ridiculous to belittle the importance of chronological studies in archaeology; they have revolutionized the subject. Yet the fact remains that they have not altered the focal point of archaeology, and in so far as environmental studies have tended to be just a means of dating, they have not affected the status of the subject as one of the humanities or arts. Now almost every archaeological site will contain something more than material for the study of human cultural development and the means of dating it. It may contain evidence about natural vegetation, soils, fauna and other features not necessarily of cultural significance (though of course they may be). I find it very disturbing to realize that every time a site is dug fundamental scientific information may be lost, simply because

it is not being looked for. I am not apportioning any blame for this; it is just unfortunate that the archaeologists, by virtue of their background, are unaware of the potentialities, while the scientists equally seem to have been unaware of the possibility that there could be something preserved which might interest them. I shall return to this point later. Today there is an increasing awareness on the part of archaeologists that significant non-archaeological material may be met with on their digs, but even when it is the use made of it is so often inadequate. Charcoal, soil samples, samples for pollen analysis, all may be submitted to experts, but their reports are merely tacked on as appendices to the normal archaeological reports. Nowhere in the body of the report does the archaeologist discuss the significance of the special reports, even if he mentions them; the expert, for his part, contents himself with a brief factual statement quite unrelated to the context. Somehow this cleavage must be removed, and it seems to me that the best hope is to train archaeologists who are capable of assessing the environmental as well as the archaeological data. *Faute de mieux*, there may be room for two reports on some sites, one the traditional archaeological report, the other a scientific appraisal of the environmental features, including human activity as one of the factors at work.

Archaeology, more than any other subject I can think of, with the possible exception of religion, stands to benefit from the integration of arts and science. These two unsatisfactory terms begin to lose themselves in this sort of context, and here much of the recent thought on the dichotomy between the disciplines—or cultures—shows to full advantage. Granted that specialization has resulted in great progress in many directions, we are now in the position, not only in archaeology, where the centrifugal development is leaving a vacuum at the centre, so that no one person can easily perceive what is going on all round the periphery. Stapledon has eloquently spoken of the need for integration rather than specialization at university level; this is the solution which must be found for archaeological teaching.

As I have already said, our Institute has built up a tradition of environmental studies. Yet can we be sure that we are not sending students out after their courses knowing little about the environmental setting in which the people they were studying were living, whether they were Acheulians, Natufians, Danubians or Saxons? Once we have environmental studies fully integrated into all our courses this possibility will be reduced. I must not sail under false pretences here: the intellectual atmosphere which favours such a pattern is none of my making—it was here when I came, and it makes my work a great deal easier. Any students who are listening, or who may later read these words, should take note that their teachers are in no doubt about the importance of environmental studies as a component part of archaeology, even though it may

not be possible just yet to achieve complete integration. I say this because I find that it is the student rather than his teacher who often fails to see the relevance of environmental studies. Direct application of much that we teach may not be possible. Inevitably, much of our knowledge of past climates, vegetation and fauna comes from northern latitudes; this is due to the concentration of research there, which in turn is due in part to the natural conditions which are most favourable in those latitudes. The student of Indian archaeology may say that for him studies of north-west European conditions are irrelevant; yet much of Indian prehistory is bound up with river terraces, and our knowledge of how these have formed is due in no small measure to intensive studies for instance in the Thames Valley. Again, the student of the Neolithic in south-west Asia may complain that to him the details of the Ice Age are of no direct concern. But at the time early agriculturalists were active in the Fertile Crescent, the nearby Zagros Mountains were emerging from a glaciation which had a marked effect on the flora of the foothills where these people were living. Moreover, it is the techniques characteristic of Pleistocene investigation, such as the pollen analysis of lake and other deposits, that are so rapidly increasing our knowledge of the past history of such areas. Even central Africa is not independent of distant areas. The deposits at Kalambo Falls indicate a succession of warmer and cooler phases which can be correlated with parallel fluctuations in Europe and elsewhere. Regional insularity is not possible in environmental studies; changes of temperature (though not necessarily of precipitation) may be world-wide, and they may have important effects on man's way of life wherever he is.

It may be argued, however, that in many cases such work has little direct application to the site being studied. This may often be so, but I believe we have here one of the most promising directions for the development of archaeological studies. Perhaps New World archaeology has something to teach us in this respect. It is probably true to say that both archaeology and an interest in past changes of vegetation developed somewhat later in America than in Europe. This has had the effect that when they did start to develop—especially since the Second World War—they developed together, and they were able to make use of techniques that had already been perfected. To take but one example, the search for the origin of maize in Mexico involved the investigation of archaeological sites on a wide front. To quote from MacNeish[1]: 'at the beginning of the first field season we were far from convinced that the much-vaunted interdisciplinary approach was practicable. We now know that it can and does work, and thanks to our experts' endeavours we have gathered and interrelated specialized studies in botany, corn, beans, squash, human faeces, pollen,

[1] MacNeish, R. S., *El origen de la civilización mesoamericana visto desde Tehuacán*, Departamento de prehistoria, Instituto nacionale de antropologia e historia, Mexico (1964). (Quotation from author's original English version.)

zoology, geology, geography, physical anthropology, prehistoric textiles, ethnohistory and ethnography.' And even that list is not quite comprehensive: it does not mention Carbon 14 dating, which linked the whole thing up. It is no accident, in my opinion, that American excursions into the fields which for so long have been the preserves of traditional archaeology are now bringing about major developments in the understanding of the conditions in which man lived, and this in turn is bound to tell us more about *why* man was doing those things which have already been revealed by the traditional methods of investigation.

The establishment of a chronology is vital if a site is to be put in its proper context *vis-à-vis* related sites, and it has always been a major concern of archaeologists to establish such a chronology. But if chronology can be established by other means, this does not of itself make environmental studies irrelevant. For instance, written history may give a chronology more accurate than any which can be provided by environmental studies, but it can still leave us ignorant of what people were doing and how their way of life was affected by, and in turn affected, their surroundings. Such ecological knowledge is dependent upon a full investigation of all that the site holds, and I have already lamented the fact that so few sites receive this sort of treatment. Indeed, it is a solemn thought that our understandable choice of the most important sites for study means that we are probably destroying the cream of the material critical for environmental studies. On the other hand, it must be admitted that at the moment we have not got the trained people whom we could apply to the ideal investigation of sites in this way. One of the tasks of my department must be to make students aware of the need in the hope that some will choose to specialize in environmental work. This task will be greatly facilitated if it can be made possible for students to come to archaeology from all academic angles, but especially from the sciences and technology.

Now it is one thing to be able to produce a mass of technical detail about a site and quite another thing to be able to interpret it correctly. I am very concerned that archaeologists should be taught that the relationship between man and his environment is a dynamic one, a point upon which I have already touched more than once. This involves a proper understanding of ecological principles. We read, for example, of the so-called wet period of the Neolithic in the Sahara, and of the large numbers of cattle bones associated with this culture. These are, in fact, taken as proof of the existence of such a wet period. But have we considered the effect of such a concentration of cattle on the vegetation? In such a climatic tension-zone their effect could have been disastrous, leading to desert conditions. This would have affected the hydrology of the region so that the watercourses and rivers ceased to flow. A geologist observing this fact would assume that the climate had become drier—perhaps

a quite false conclusion. Or again, in a region of high rainfall, the destruction of the forest on the hills would result in increased run-off, so that in basins where water collects or on low-lying flat ground peat might form, thus leading to the conclusion that the climate had become wetter. It is often not appreciated that the effect of a cover of vegetation is to make conditions more mesic; consequently the destruction of that cover will tend to throw the system back towards the extremes which previously existed—without any change in general climate. There is, of course, a profound change in microclimate. It is under conditions of ecological tension that such effects would be most pronounced, but it is remarkable how often early man was living and operating in just such conditions.

This dynamic relationship between the living organisms and their environment can be seen in many other ways. The soil, in particular, is liable to be affected by any disturbance of the natural balance—a point I shall be saying more about a little later on. It might be mentioned here, however, that Hyams, in his book *Soil and Civilization*, has shown how the fortunes of prehistoric cultures have been determined by the ability of the people to establish a balanced relationship between their land-use and the soil. This is a facet of environmental study upon which archaeological sites often hold a good deal of readily-extractable information, but it is only quite recently that the fact has been appreciated. Attention has largely been focused on west European sites, but there must be a very much wider application. It is striking to note, as Hyams has shown, that in so many of the regions in which flourishing civilizations have existed the land is now derelict in one way or another. The very civilizations of the past which we so much admire and to which we devote so much study were often grossly out of balance with their environments. Enlightened individuals of those times occasionally pointed this out, but the fact remained. This need not surprise us, for if ever a civilization were out of balance our own is, even though we have knowledge of the principles governing ecological equilibrium. In assessing the stature of a civilization we are not taking a balanced view if we fail to take this relationship with nature into consideration. It may prove to be the one stumbling block which brings the whole cultural edifice crashing to destruction.

So far I have been dealing with Environmental Studies in Archaeology; now I want to turn to a consideration of Archaeology in Environmental Studies. Ecology, as a scientific discipline in its own right, has been in existence for a little over half a century; not long, perhaps, in the dimension of time to which archaeologists are accustomed. But time alone is not the sole criterion. In all sciences the last fifty years have seen an enormous acceleration in the rate at which knowledge has been acquired. Yet in 1959 Professor Burges opened his Presidential Address to the British Ecological Society with these words: 'It is

inevitable that a great deal of ecology must be descriptive, yet it is surprising that when interest changed from the description of the structural aspects of vegetation to the examination of the changes which occur, the essential parameter of any changing system, time, has so seldom been mentioned. Succession has formed the subject of innumerable papers in the last forty years, yet in only a handful has the rate of the process been discussed. Even where the evidence was clearly available in the form of historical data or in the annual rings of woody plants, the idea of time as an essential part of the process did not seem to occur to, or perhaps seemed unimportant to, the authors.'[2] I quote this passage, upon which Burges went on to elaborate, because it pinpoints an extraordinary blind-spot amongst ecologists, a blind-spot which also embraces the role of early man in times past. If this is true for ecologists it is no less true for specialists in the other land sciences, such as pedology, though the last few years have seen some awakening to the problem. It should be apparent, but it seldom seems to have registered, that man, even primitive man, had at his disposal some of the most potent ecological factors; these may be direct or indirect. The use of fire is the most obvious example, but his manipulation of the numbers and movements of the larger herbivores and his ability to remove a forest cover and so alter the control exerted by the natural dominant are both factors of great weight ecologically. The overall effect of these influences depends, of course, upon their intensity and duration. Population density, however, is a matter on which we have very scanty evidence from the past, and it has too often been assumed that lack of evidence means lack of population. It may simply be that the evidence has not been looked for and therefore not found. For instance, just after the last war an expedition went out to Nigeria to study the structure, composition and regeneration of virgin tropical rain forest. Part of the Benin forest was chosen as being the best example of rain forest with no history of disturbance, at least until modern times. The expedition dug twenty-four soil pits in the selected square-mile sample of forest, and in seventeen of them found pottery, charcoal and charred oil-palm kernels, proof positive of previous cultivation. Once this was recognized other corroborative data began to accumulate, and it appears that the forest there today could be even less than 300 years old, so that the present high forest trees may themselves be the first generation since the period of cultivation.

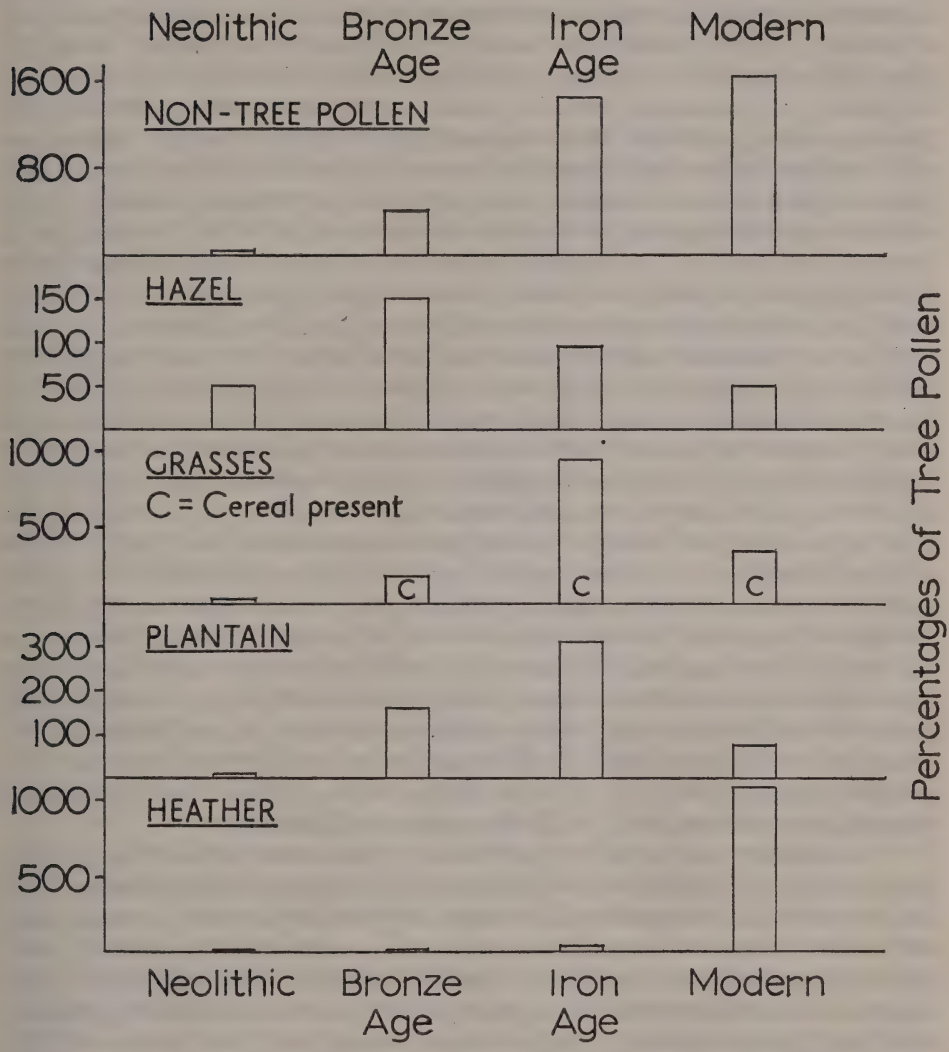
Ecologists have been debating for many years the nature of the vegetation which is reached in equilibrium with the climate in any given region, the so-called climatic climax. The essential for such a condition is that it shall be completely natural—undisturbed by outside influences such as man. Yet it is surprising how often vegetation is claimed as being climax in areas where history

[2] Burges, A., 'Time and size as factors in ecology', *J. Ecol.* 48 (1960), 273–85.

shows there have in the past been considerable populations, and yet no consideration is given to their possible effect. There seems to be an innate tendency among field-scientists to accept the present as the normal without pausing to think what checks might be possible on past history such as might be revealed by archaeological sites. I am inclined to think that this reflects a shortcoming in basic training, a failure to attach sufficient importance to the fourth dimension. Perhaps I may be allowed to illustrate this point from my own early research experience. My problem was to find out why some areas of heathland or moorland were so difficult to afforest—they were almost lethal to many species of tree. It was soon apparent that, to coin a phrase, the answer lay in the soil. The soil was extremely acid and the iron and nutrients had been washed (or leached) from the upper horizon, which had become ashy grey, and deposited lower down where a tough pan had formed. This was a type of soil, the podzol, which formed, so I was taught, on non-calcareous parent material under British climatic conditions. This would imply that these soil conditions were inevitable and there was not much we could do about it. It is very odd, however, that in such areas there are often numerous earthworks of various ages, especially round barrows, and it occurred to me that beneath them the contemporary soil might be preserved. So I perpetrated an archaeological sin—which, looking back on it, is probably responsible for my being here today—by digging a pit into one of the barrows until I had exposed the buried soil. The result was certainly illuminating: the soil showed no visible trace of leaching, which it certainly should have done if it had been developing as a podzol ever since the Ice Age. Furthermore, I was able to extract pollen from the buried surface and show that at that time the vegetation was not heathland but oak woodland with heathy clearings. Using this method it has since been shown that soil deterioration following forest clearance and a period of primitive cultivation is very widespread; our poor soils of today are often the direct result of human influence starting in prehistoric times. Furthermore, we now know that if left alone the vegetation and soil will gradually return towards the more fertile condition which previously existed. But the real point of this story lies in the fact that, unbeknown to me, archaeologists already had the relevant information: van Giffen had found time and time again that on the Dutch heaths there were unleached soils under Neolithic barrows, but podzolized soils under Bronze Age barrows. Indeed, he used this as a criterion for judging their age. As far as I know he did not draw the ecological conclusion from this; certainly the ecologists and pedologists had not assimilated the facts which he had unearthed. Had they done so it would have made a big difference to what was being taught as the fundamental principles of soil genesis, and I, working in an applied field, would have been saved a great deal of time in working out for myself the principles which I should have been applying.

This illustrates the unfortunate and probably unconscious barrier between the natural sciences and archaeology, even in fields where they should be closely related. This barrier still persists. Only last year the Royal Society held a Discussion Meeting on the theme 'Post-glacial Changes in the Habitat', a theme, one would have thought, from which archaeology could not be excluded. In fact, in several of the papers the influence of man on the habitat was repeatedly referred to, directly and indirectly, yet, as far as I am aware, no paper had been invited from an archaeologist nor had any archaeologist come to the meeting. Quaternary research has always been closely linked with archaeology, but it is probably true to say that on balance this has benefited archaeology more than it has Quaternary research. It should be our aim at the Institute to produce people who can make positive contributions in fields like this, so that no scientific meeting dealing with the subject is complete without them. To this end the use of the facilities for post-graduate scientific research in the Department should be encouraged to the full, not least by graduates from other disciplines.

In view of what has been said about the effect of man on soil development it must be obvious that in many parts of the world soils cannot be understood without some knowledge of their ancient history—it takes thousands of years for a soil to reach its mature state. Some soil surveyors in this country are aware of this, though their efforts at the moment can do little more than build up the evidence upon which in the future soil interpretation will have to be based. In other fields of natural science, too, the potential contribution of archaeological sites to our fund of fundamental knowledge is at least becoming recognized, though the impact as yet is small. The effect of man on the migration and distribution of plants and animals has often been ignored in the past, but those organisms closely associated with man's way of life, such as the weeds of his fields, are now becoming the subjects of interesting historical investigation. Sometimes a group of sites of differing ages may present the opportunity for the study of vegetational dynamics. For instance, on Great Ayton Moor in north-east Yorkshire, earthworks of Neolithic, Bronze Age and Iron Age date exist close together, and in conjunction with the present moor surface they provide material for pollen analysis covering four distinct periods. The histograms (Fig. 1) clearly show the transition from forest, through a period of cultivation which reached its peak in the Iron Age, to the spread of heather after the Iron Age. Such information about a specific site has never, as far as I know, been achieved by conventional ecological methods. The method of approach, in fact, is parallel to the search for the origins of maize referred to earlier. Indeed, the hunt for the origins of the cereals and cultigens all over the world is an excellent example of how archaeology can be the key to a scientific programme.



POLLEN ANALYSES OF BURIED SURFACES
GREAT AYTON MOOR, YORKS. N.R.

From these examples, it should be apparent that in biology and in the field sciences in particular, a study of the parameter, time, is an essential part of the whole study. Even in some other sciences, for example biochemistry or metallurgy, there may be a great deal to be gained. It is true that the time factor can frequently, and sometimes best, be studied from non-archaeological sites, but there are many occasions when archaeological sites can provide information which cannot be found elsewhere. Moreover, it should not be overlooked that archaeological sites are constantly being dug, so that potential sources of such scientific data are regularly available. One of our aims in the Department of Human Environment is to increase our ability to extract such information by developing new techniques of investigation or applying old ones in new ways, as well as continuing those lines for which we are already equipped and trained, such as the mechanical and chemical analysis of soils, pollen analysis, and the identification of material such as wood, bones or mollusca. This calls for close liaison with adnate sciences, a liaison which I hope will be mutually advantageous. To some extent this will involve doing a certain amount of routine advisory work and analysis for field archaeologists and other workers. Up to a point this can be of great value to a research department, depending upon the need for building up a body of evidence in some particular direction, but it must also be admitted that there may come a point beyond which the undertaking of routine work can become a serious handicap. Ideally, such work would seem to be the function of a museum rather than a university department, but at the moment this ideal is rarely attainable. Side by side with the growing recognition on the part of museums that their services should include such work, we for our part should be training personnel, after a broad-based initial course, to take jobs as specialists on museum staffs. In the meantime we shall do what we can in an advisory capacity, but may have to decline our services in cases where the research and teaching work of the department might suffer.

One cannot work in the field of Human Environment without being aware that so many of the things we see happening in the past are still happening today and constitute, indeed, some of the major problems of our time. In many parts of the world today the human lot is malnutrition, disease and a mercifully short life. It is frequently assumed that the land is incapable of providing better subsistence—at any rate without the application of modern techniques of agriculture involving the expenditure of huge sums of money, and that involves politics. So often, however, environmental studies show that the fundamental trouble is a lack of ecological balance and that this has been so ever since man emerged from and destroyed his forest environment. That development was critical, for unless the new way of life still followed the ecological laws which govern the stability of the habitat, the environment would deteriorate and in most cases

never be given the chance to restore itself. We have seen that this can happen even in our own favourable landscape, where large areas which once supported human life are now useless for this purpose. In our folly we still try to use such land one way or another without realizing that we continue to violate the natural laws of the environment.

I am not suggesting that studies of past conditions will solve present problems, but I do believe that, taken with what we know and are still learning about ecological processes, they may tell us where things have gone wrong. Until we know this, efforts at restitution will be of a hit-or-miss nature and much expenditure of money and effort may be stultified.

Earlier in this lecture I postulated an imaginary geography book and made a plea for being allowed to write a paragraph or two in the final chapter. This would point out that the processes of environmental deterioration which are revealed by a study of the past are not relevant only to the past. One big difference, however, is that the rate at which change is taking place today may be much greater because of the more modern equipment available to man, and the much larger populations involved. In Africa, for instance, the tropical forest has been destroyed in the last hundred years at a rate unparalleled in preceding ages; in view of the precarious balance between the fertility of the land and the forest which generates and protects it, this represents a human ecological problem on a vast scale, but the basic principles are the same as they ever were.

There is a book on our library shelves—and I am sorry to say that it usually is on the shelves—called *Man's Role in Changing the Face of the Earth*. It is the proceedings of a symposium held in 1955 under the auspices of the Wenner-Gren Foundation. In it there are accounts of man's assault on his environment ranging from the use of fire in the Palaeolithic to atomic contamination today; it ranges from the Arctic to the Tropics. In its 1,193 pages are accounts of ecological imbalance at all times and in all places. Yet in spite of its size and scope this book is only an outline of what is virtually a major subject in its own right. The subject has a unity of its own and is too big to remain, as it has been up to now, a fringe subject dealt with in passing by geographers, anthropologists, biologists and archaeologists. This is the place into which the work of my department really fits, and this great book, with all the faults that symposium volumes inevitably have, is our textbook. It emphasizes that there are no barriers of place or of time; but we, of course, shall be concerned primarily with the past, though the present may sometimes come into our reckoning, especially when we embark upon experiment.

I have argued that Environmental Studies are a fundamental part of Archaeology and archaeological training, that Archaeology, as a major component of the time factor, is an integral part of Environmental Studies, wherever

they are carried out. Together they both provide an essential background to an understanding of man's relationship with his environment on earth yesterday and today.

This is a pretty big claim, and you may feel that it is somewhat brash and presumptuous of me to suggest that my little department can make any sort of assault on a problem of this size. If I have given that impression my only excuse is the consuming concern which I and my colleagues in the department feel for our subject. Of course so small a band cannot make large inroads into so wide a field, but by our very existence as a department dedicated specifically to this work we may focus attention on the need. I hope that other departments with greater resources than ours will enter the field and make more rapid progress than we may find possible. This I should welcome in a spirit of co-operation, not competition. Our subject is world-wide and will absorb all the efforts that can collectively be put into it. Time is not on our side, especially in countries of high population density where there is the dual threat—to the environment of present-day man himself, and to the ancient remains on which our work depends. If I have left you all in no doubt about the scope and the urgency of our subject, I shall be well satisfied with this evening's work; you will know that I have been inaugurated into a job which really needs doing.

To end up with, may I descend from the clouds (or the dust storms) and return to the point where I started, the mundane matter of a title for this lecture. I would so have liked to use as a title just one word, a word vibrant with meaning, but I could not use it because it had never been defined. It came to me in a curious way. Last summer I was called to an interview at Senate House; I was sent upstairs and told to find Room 302. On the landing I found a portly figure in uniform and asked him where Room 302 was. He told me, and added: 'Is it the Arkerbology you are in for?' Arkerbology. That's the word I wanted; it expresses everything succinctly, and yet has those undertones of disbelief which some of you may be tempted to hold.

The Basis of Coinage*

by K. DE B. CODRINGTON

Head in his preface to his *Historia Numorum* pays a just tribute to Eckhel's *Doctrina Numorum*, published in Vienna in the closing year of the eighteenth century. Eckhel in this great pioneer work refused to discuss the weights of coins in spite of Aristotle's statement that a coin was a piece of metal of fixed weight. Until the chronology of the numerous issues of ancient coins could be established, their weights had no significance. The whole subject of metrology was obscure, 'Fatendum est etiam multa esse adhuc in hac causa dubia atque incerta multa Cimmeriis adhuc noctibus involuta, quod satis ex eruditorum litibus atque dissidiis apparet'. Head, however, was optimistic. Mommsen, Brandis, Hultsch and others had been at work. The Cimmerian darkness had been dispersed, he suggested, though his optimism is tempered by a curious misprint. He writes, 'the *night* has at last *broken* and we are beginning to see well enough to feel our way'. Yet in 1899 Hill found it necessary to warn his colleagues that metrology was the least satisfactory department of ancient numismatics, and in 1918 Gardner admits that the question of the weight standards used for coins in Hellas is a very difficult and complicated one.

The basic problem of the origins of these standards has been dealt with in two ways. Attempts have been made to show that the Greek measures of length, area, volume and weight were fitted together scientifically, so that the Greek *talent* could be the weight of a cubic foot of water. This sort of argument neglects not only the history of ideas but the history of the measures under discussion, for the standardization of the Attic foot followed the introduction of Greek coins. The origins of Greek coin-weights have also been sought abroad, not only in Mesopotamia and Persia, where the *talent* and the *mina* and the *Daric* came from, but in ancient Egypt and Mycenae, and in the pre-history of the Mediterranean countries themselves.

It is often forgotten that weights and measures have a practical use. In England corn is still sold by the *quarter*, and the widely used *avoirdupois* has not supplanted the jeweller's grains and the apothecary's *scruples*, which survive because of their convenience for distinguishing small quantities. Indeed, although Indian numismatists should pay attention to the international standing of the *metric* system, a very little experience will show that grains *Troy* are rather more convenient for classifying the weights of coins than *grammes*. They provide a professional measure, having been developed by those who were con-

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cerned with that range of weights. The virtue of the *Troy* system is that it is not philosophical but practical. Craftsmen are concerned only with the range of weights their craft requires them to handle. Discussion of the gross weights, the *talents* and *minas*, which lie beyond the weights of the coins, has seldom been helpful. When Beloch created *minas* at Thasos and Miletus as well as at Athens and Aegina, and so brought into being a Pan-Hellenic *mina*, he added nothing to our understanding of the organization of the various groups of coins in which our problems lie. Indeed, it is advisable to remember that *talents* and *minas* are Asiatic by origin, and that they and the Greek *drachm* were in use long before the invention of coinage.

Hill pays careful attention to all these matters. Against primitive barter or 'immediate' exchange, he sets 'mediate' exchange by means of the uncoined precious metals, or coins of full value, or various forms of more or less valueless tokens. What makes a coin is its weight, which can be tested on the scales, and its purity, which is not so easily tested, though the issuing authority, whose device it bears, guarantees both weight and purity. Coins are, therefore, the combined product of metallurgical skill and the ability to weigh accurately. Archaeology makes it plain that pure silver was available from very early times, but that pure gold was not available until the Persian period. The earliest coins are of silver and electrum, the natural alloy of silver and gold. The unstruck *dumps*, some of which represent recognizable weights, are also of silver and electrum, and may be regarded as proto-coins. In any case, they are evidence of the accuracy of the balance which brought them into being.

The ancient process of cupellation, which had long ago made pure silver available, enabled Darius to levy his taxes in the pure metal. The recently discovered method of extracting pure gold from electrum enabled him to reform currency as he found it, and to create a bimetallic system, the effects of which were far-reaching and long enduring. His *Daric* was the weight of the *Shekel*, the 1/60 of the *mina*, somewhat increased. Head says that 'the Persian Darics form the staple of the gold currency of the whole ancient world, until such time as they were . . . superseded by the gold *staters* of Philip and Alexander. The *Daric* was the universal gold unit of the Mediterranean world'.

It is, however, important to realize that silver was the chief metal of account in the ancient world, though uncoined gold was also used as a medium of exchange. Abraham was not only very rich in cattle and in silver and in gold, but he weighed out to Ephraim the silver which he had named in the audience of the sons of Heth, four hundred shekels of silver current with the merchant. Ridgeway insists that gold was the chief medium of exchange, because the Homeric *talent* is used only for gold and not for silver, the general unit used for valuing arms or prizes being the value of the ox. He also assumes that primitive

man used seed weights to weigh his gold, but he does not seem to realize that centuries must have passed before the mathematically controlled Mesopotamian sexagesimal system of weights could come into being. Scales and weights of a kind have been in existence for a long time, yet the larger weights used in Europe and in India and Iran show considerable variation. No attempt was made to standardize the *ass-load* or the *maund* for the simple reason that the problems of the fulcrum and suspension of the heavy balance were insoluble, and remained so. The accurate weighing of small weights, also, has peculiar problems, not only of suspension and inertia, but of the provision of small standardized weights. Seeds were used as a convenient approximation, possibly first of all by apothecaries for their drugs.

It is noteworthy that in spite of the development of weights and measures in ancient Egypt, Africa as a whole has never used the balance. For everyday purposes the load, the armful, or the handful is sufficient. In Greece large sums of silver are always given in *drachms*, not in *talents* or *minas* or *staters*. The spread of the use of the seed *Abrus precatorius*, well established in India as a weight, to the Arabian ports and recently to West Africa, is, indeed, significant. But to suggest as Lehmann and Thomas do that seeds provided the original units of metrology, all larger weights being multiples of seed-weights, neglects the technological difficulties of constructing small balances. It also obscures the plain fact that even *Abrus precatorius* varies considerably. Thomas after laboriously weighing beans of all kinds in order to find the original of the Indian *māṣa* reports that *Phaseolus vulgaris* is the only seed that approximates to the required weight. Unfortunately this is an American species, as recent in India as the tomato, the chili, maize and tobacco.

Numismatists, faced by the marked variations in the weights of the groups of coins they study, are obviously sceptical as to the accuracy of the means of estimating weights available to the ancient mint-masters. The old Mesopotamian *hallur*, like the India *māṣa*, was a bean-weight, 40 *hallurin* going to the *shekel*. In this case, a natural seed-weight has been standardized as a fraction of the basic unit of the official sexagesimal system. It must be accepted as practical, that is to say, that scales of sufficient accuracy were available to weigh it out. Being 1/40 of the *shekel*, it weighed 3·236 *grains* (0·2104 *grammes*). Thomas's *māṣa* weighed 3·625 *grains* and his *Abrus precatorius* 1·75 grains.

The existence of the *pennyweight* makes it plain that coins can be used as weights. This is an ancient practice, for the *Daric* weighed a *shekel*, 1/60 of a *mina*. The *karash*, the old Iranian weight used by Darius for his system of taxation, which intruded through the Persian Indian province into India, was 10 *shekels;* that is to say, it weighed 10 *Darics* on the scales. In this case, an old weight has been standardized as a multiple of the *Daric*, which is, therefore, the practical basis of both the *hallur* and the *karash*.

Until January 1819, the Indian system maintained the undoubted advantage of a direct connection between coin and weight. At that time the East India Company changed the weight of the rupee by regulation. In order to give the coins a longer life and to prevent them being melted down by the jewellers as pure silver, an addition of copper was made without diminishing the silver content. The Company thus created the *sicca rupee*, but was forced to preserve the weight of the old pure silver coin as the official *sicca* weight, the *maund* consisting of 40 *sirs* of 80 *siccas*. Prinsep, as an ' orientalist ', regretted the inconvenience caused to the people by this interference with the ancient Indian tradition of the direct connection between coins and units of weight.

The making of the blanks on which coins are struck is more complicated than many numismatists realize. The dumps, which preceded coinage, and the earliest punch-marked coins seem to have been made by dropping the molten metal into oil. Later the blanks were cast in moulds. This process demands that small quantities of molten metal should be poured out of the crucible in exact quantities. In India the blanks were cut from sheet metal or from bars, the weight being regulated by clipping.

Ridgeway believes that the Greek *obol* was originally a rod of copper of a definite length and thickness, but it need not have been more than a spike or nail or spit of definite weight, six of which made up the *drachm* or handful. He also believes that the Roman *as* was a copper rod of definite thickness and length, which when divided according to length would provide a regular series of weights. This entails the identification of *uncia* with *unguis* (Sanskrit *anguli*). Some of the blanks for India's early punch-marked currency may have been made in this way. Certainly measured sections cut from the rod could be easily adjusted to any required weight by means of filing. But gold and silver are ductile. The art of wire-drawing is ancient and the product can be standardized to a high degree of accuracy. Lengths of such wire can, therefore be cut into units of standard weight, the coil of wire being first adjusted to the weight of the *drachm* of which the fractions were required, the division by length into 1/2, 1/3, and 1/6 being simple. Indeed, brass-rod currency was used in the Congo, as coils of gold wire were in Mycenae and Ireland, though there were often strips cut from the plate. The very real difficulties of melting and pouring small quantities of the precious metals remain. Coining is a very skilful trade.

The weight standards of the various Greek systems which have been recognized by numismatists are introduced at the end of the *British Museum Guide to the Principal Coins of the Greeks* as follows: 'The weights are approximate only and equivalents in *grammes* have, therefore, not been given; they have not been deduced by *a priori* reasoning from theoretical units but represent the normal weights which a user might expect on receiving the coins from the mint.' The

avoidance of *a priori* reasoning probably amounts to a rejection of all weights derived from hypothetical *minas* or *talents*, but it is not easy to understand what is meant by 'normal weights'. In point of fact, a wide variation in most of the weights catalogued is admitted, the base of the *Persic* system being accepted as ranging between 177 and 145 grains, 'the normal weights' grouping round 175, 166 and 150 grains, and that of the *Phoenician* system as 225 to 120 grains. Such variations in weight cannot be attributed to inaccurate weighing. Darius certainly made no such allowances in his tax-receipts, nor could dealing in any ordinary currency be carried on in such terms. It is, however, often suggested that the differences were regional or, more commonly, a matter of period, the base of the system changing with the passing of time, probably as the result of change in the relative value of the precious metals. Brandis regards the *Aeginetic didrachm* of 196 grains as 'a revised Babylonian silver standard, 172–9 grains'. Hultsch thinks it was 'derived from an Aeginetic *mina* which had the value of six light Babylonian shekels of gold, Au30×6=Au180=AR10300 (*sic*). Ridgeway, who accepts the validity of the weights in question, prefers to rely on changes in the relative value of gold and silver. At 15:1 his old Homeric talent of 135 grains would be worth 2025 grains of silver and so would bring into being ten silver coins of 202·5 grains, the earliest Aeginetic weight. Assuming the Homeric *talent* to be 130 grains, it would be equal to ten silver coins of 195 grains. Gardner discusses at length the important problem of the weights of the early coins of Cyrene. The British Museum *tetradrachm* weighs 266 grains. Babelon accepts this as Euboic, but Gardner holds that the Euboic does not rise above 130 grains. The Attic standard does rise to 135 grains, but it only came into being under Peisistratus, and the Cyrene coins are archaic in style and must be given to the beginning of the sixth century. Because of Cyrene's known contacts with Egypt, Gardner accepts their standard as Egyptian, but in doing so he is forced to admit that the Egyptian *kedet* has been of various weights at different times and in different parts of the country. He relies on Petrie's report of the weights found at Naucratis which form two series, one of 136·8 to 153 grains and the other of 127·8 to 148 grains. Gardner says that he is satisfied that the Attic drachm is 'equivalent to a light *kedet* weight '. In terms of the craft of coining and, also, of the Mediterranean business sense of the *Trapezitai* and *Kapīloi* through whose hands coinage of all kinds passed, coins of light weight would get short shrift. Rates of exchange could not have been established unless the standard weights of the contemporary systems were maintained.

Ridgeway disposes of Brandis' identification of the normal Aeginetic *didrachm* (196 grains) as a 'raised Babylonian silver standard' (172·9) by pointing out that his conclusion was based on a comparison of the heaviest specimens of the Babylonian standard with the lightest of the Aeginetic. He calls his readers'

attention to the fact that 'in numismatics the weight of the heaviest specimens of any series must be regarded as the true index of the normal weight, for whatever may have been the inclination to mint coins of a weight lighter than the proven standard, we may rest assured that the ancient mint-master was no more inclined than his modern representative to put into coins of gold and silver a single grain more than the legal amount. Hence it is a most faulty and fallacious method when dealing with coin weights to take the average of a certain number of specimens as the true standards'.

This cannot be denied. In attempting to understand the Greek systems, we must devote ourselves to the coins as we find them, and face the fact that their weights are either systematic or they are not. If they are not, they have no significance and statistics will not disguise the fact. The samples we are studying are the various issues of the cities, states, colonies, kings and satraps who authorize the mints. Where there is a superscription or a recognizable symbol or mint-mark we are in sight of Prime Chronology. Where this is not so, we must group our coins by style and be content with Secondary Chronology. In order to make Ridgeway's warning precise, it is necessary to mention that certain numismatists have asserted that the weight of coins can be increased through oxidation. This may or may not be so, but the weight of any coin which shows granular degeneration of the surface or which has been treated in the laboratory for such a condition, should not be relied upon. Catalogue entries should make this clear in every case.

Hill brings his usual common sense to bear on the whole question of the Greek systems. It was in Asia Minor where Greece came into contact with the East, that coinage began at a time when scientific standards of weight had long been in use for weighing metals. The numismatist is not really concerned with the price of oxen or the weight of seeds. 'The weight of 8·447 grammes (129·45 grains) would not be employed by peoples in all parts of the world because that amount of gold was the equivalent of an ox (if it was!) but because the unit was employed for the weighing of gold when that metal was first made into coins.' In point of fact, the earliest coins were of electrum and silver and not of gold, and are based on a lower weight than 129·45 grains, which was the weight adopted by Darius for his reformed currency. It was bimetallic, for we know that 20 silver *sigloi* weighing 86·3 grains went to the gold *Daric* and that this relationship embodies a gold-silver ratio of 1:13⅓. As must be expected, the gold-silver content of the electrum of the early coins varies according to its source. But the coined gold and silver was remarkably pure. The Persian *Daric* was between ·958 and ·970 fine and this high standard was preserved in the *staters* of Philip and Alexander (·997) and Augustus (·998). The standard of the silver is almost as high, rarely falling below ·960 at Athens and Aegina. The

Indian punch-marked series are conspicuous for their low, indeed, debased standard. Many of the Asiatic Attic imitations are debased, as are some of the smaller coins in Hellas itself.

The issuing authority guarantees both the weight and the purity of the metal of a coin. The weight-systems used may be obscure to us, but there can be no doubt of the purity of the larger coins. The crudity of the methods of assay available to shop-keepers and money-changers makes the need for good coinage evident. The colour of the streak made by the specimen on the stone could be compared with that made by the pure metal, and there were other simple but inconclusive tests. Strong acids were not available nor was mercury. However, the streak on the stone did provide an accurate test for the adulteration of gold with copper, which was common both in the Old World and the New, since highly coloured gold was liked. If copper was present, the streak, when dipped in rotten urine, would display the unmistakable blue of cuprammonium. This was probably the method mentioned by Theophrastus when he describes the Lydian stone, but he has unwarranted confidence in its quantitative accuracy.

The account given by Diodorus of the purification of gold in the Egyptian mines is impractical. He says that the crude metal was heated in a closed crucible with lead, tin, salt and barley chaff. This account is merely a garbled version of the much-quoted statement of Agatharcides concerning the purification of electrum. It requires prolonged heating in a closed crucible, the necessary materials being clay, salt and chaff of some kind. If these were present in sufficient quantities, the added lead and tin would probably be converted to the chloride and so removed, but they play no constructive part in the process. Any copper present would also be removed.

The consistently high standard of purity of the gold and silver used for coinage was the product of metallurgical skill. Before the necessary knowledge had been achieved certain ideas as to gold were in circulation and have been preserved by Strabo, Pliny the Elder and others. Electrum was known as white gold, but was regarded in the early days of coinage as a third, distinct precious metal, being valued at a ratio of 10:1 to silver. On the other hand, Arabian gold was appreciated for its fiery colour which set off precious stones to the best advantage. This was not produced from gold dust, but from nuggets which the inhabitants of one of the two gold-producing areas pierced and used for necklaces. It did not need purifying and was therefore called 'unfired'. The tradition that nugget gold is purer than washed gold is well established, but it is not borne out by analysis. Strabo repeats Polybius' story of the mine in the neighbourhood of Aquileia in the territory of the Tarvisci of Novicum, which produced nuggets of great purity of the size of a bean or lupin seed, that is to say, of a size that could be hand-picked. These lost 1/8 in refining and presumably contained this

amount of silver. The rest of the dust had to be washed and smelted. Pliny the Elder continues this tradition in his description of mining methods in Spain. Shafts were sunk and nuggets of over ten pounds were found, which did not require refining. He preserves three Spanish mining terms: shafts were called *Arrugia*, nuggets *Palacra* or *Palacrana*, and unrefined gold-dust *Balux*. The main sources for this information are Diodorus LL,50 *et seq.*, Strabo 173, 34 *et seq.* and Pliny N. H. 26, 4, XXXIII. Two other passages in Strabo (146 and 147) preserve details about Spanish mining which Pliny omits. Silver, tin and white gold occurred as outcrops; it is specifically said that the gold was mixed with silver. The nuggets needed only a little refining. The gold dust was purified with a kind of earth containing alum and vitriol(?) the residuum being electrum. This process is impractical, but it is said that the silver was burnt away from the electrum, which can only mean that it was lost.

Since analysis does not show that nugget gold is purer than gold dust, it is not easy to understand these accounts. Strabo's estimate of the loss in refining nuggets is a clear indication that it was known that nugget gold was not pure. His account of the refining of electrum is not practical, but he says that the silver was burnt away. It may be pointed out that the chloride and carbonate method of refining electrum in the crucible is really only suitable for gold dust. Nuggets would have to be reduced in size, either by the chisel or the file. The taste for red gold has endured. In ancient times red gold was manufactured by adulteration with copper, for copper is not found in any quantity as a natural alloy of gold. The surface enrichment of gold and silver for dishonest purposes has, also, been widely practised. The Spaniards met with it in the New World. In Burma in the nineteenth century a mixture of vegetable acids, including *tamarind* juice, was used to redden gold repoussé work superficially.

It is obvious that coins of almost pure gold and silver will suffer a loss of weight by wear. The weight of a coin can also be diminished by clipping or filing, though 'sweating' by means of a strong acid is unlikely in ancient times owing to the want of suitable containers. It has been suggested that electrum was preferred to gold because it wore better, but this approach to coinage belongs to an age in which coins have been reduced to indestructible but valueless tokens, and is not ancient. The Indian gold *mohurs* were made of pure gold, and as such passed in large numbers into the hands of the jewellers to be worked up into ornaments, their value in silver coins being fixed at the current bazaar rate by their weight on the scales.

Hill begins his examination of the weight system of the early coins by saying 'since coinage originated in Asia Minor and not in Egypt, it was the weight-system of Babylon and its derivatives to which the early coin-weights belonged'. He then repeats Head's account, referring also to Lehmann and Hultsch. He

records the existence of the old *Heavy* and *Light minas*, one being the double of the other, but he rightly does not seek signs of their perpetuation in the early coins as Head did. From the point of view of shoppers, shop-keepers and money-changers, it is not the origins of weight-systems that matter, but their systematic organization. It is true that if the Attic *drachm* is 67·5 grains, a coin of 135 grains will be a *didrachm* and a coin of 270 grains, a *tetradrachm*. The *obolos* of 11·25 grains was practical enough as 1/6 of this *drachm*, the *diobolos* of 22·5 grains as 1/6 of the *didrachm*, and the *tetrobolos* as 1/6 of the *tetradrachm*. The money-changers' mental arithmetic was, therefore, based on the sixth and owed nothing to the doubling of the old Babylonian *mina*.

Hill, however, as others have done, reads into the simple fact that royal *minas* and common *minas* existed a machinery of taxation in accordance with which a certain percentage was added to all the common weights whenever payments were made to the royal treasury. He goes so far as to say that in the first instance the addition was 1/24, but that in later times an addition of 1/20 appears to have been made, revealing the influence of the decimal system. As Beloch observes, by such methods any one weight may be derived from any other. To this, however, Hill adds Lehmann's discussion of a 2 *karash* weight which is inscribed '1/3 *mina* 1 *shekel*'. The *karash*, we know, is a weight of 10 *shekels*. This weight, therefore, is $1/3 \times 60 + 1$ *shekel*, the addition of 5% to the 2 *karash* being attributed to taxation. There is no proof that any such system was ever applied to coinage. Another theory of the same kind is that issuing authorities deliberately issued underweight coins in order to recoup the cost of minting. It is pointed out that this would diminish the real value of the coins below their face value and so prevent their being melted down. Such subtlety is all very well in the study, but in the market-place such a debased coinage would either be refused or discounted.

Before the invention of coinage, both gold and silver were used as a means of payment. We know that the gold was not pure. Also, Hammer's analysis of the *hectae* of Phocaea and Mytilene shows that they were made of an alloy consisting of Au40%, Ag52% and Cu8%. Yet some sort of bimetallic practice was established. Records of the market-price of gold, that is to say, of the silver equivalent of gold, are difficult to utilize historically because we are entirely ignorant of the practice of the market. It may, however, be taken for granted that three kinds of gold could be distinguished, white, which was unfired natural electrum, pure gold, and the jewellers' red gold, adulterated with copper. The fact is that the earliest coins are monometallic, the ratio of electrum to silver being 1:10. When pure gold is available, bimetallism became possible, but in order to establish a bimetallic currency the weights of coins had to be organized. Hill believes that we have to deal with three early gold standards, the 'heavy'

Croesean of approximately 165 grains, the 'light' Croesean of 125 grains, and the Persian *Daric* of 129·63 grains. It is apparent, however, that $1/4 \times 165 = 41{\cdot}25$ grains, and that $1/3 \times 125 = 41{\cdot}66$ grains, while 1/3 of the Daric is 43·21 grains. Silver coins of 42 grains are familiar enough and must be assigned to the Phoenician system which maintained its standard units until Alexander's time and after.

The basis of the light and heavy Croesean gold is obviously the same and since the Daric was the weight of the *shekel*, it may, perhaps, be assumed that the Croesean gold coins represent the weight of the contemporary local *shekel*. This is born out by the existence of silver coins of approximately 82 grains, the forerunners of the Persian *siglos*. Ratios of 1:10 between electrum and silver and of 1:13⅓ between gold and silver may also be distinguished in this coinage, which is generally admitted to be pre-Darius.

It has been said that the *Daric* exercised no influence on the coinage of Hellas and that it had no face value at places like Athens and Corinth. Being of pure gold, *Darics* would have a market value anywhere, especially in cities and states which did not issue gold coins. As Hill points out, the great trading cities are meagrely represented in the field of early coinage. Crete and Cyprus seem to have had no urgent need for currency of their own, while Phoenicia, Egypt and Mesopotamia did without coins for centuries. Yet the conservatism of the Ionian coin-types, which remained crude in an age of marked artistic accomplishment, can only be interpreted in terms of the unwillingness of the issuing authorities to unsettle their customers by innovations. The silver coins issued before the fifth century B.C. were for the most part small denominations. The Greek terms *stater* and *drachm* are far from clear. *Stater* is usually only used for gold. When used by numismatists for silver coins, it is given the meaning of the larger or more important coin of the series. Hill says that the *stater* was the standard or mint-coin in any system, *as was the shekel in the Orient*. But this is not so. The gold shekel was the *Daric* and there were no fractions of the *Daric*, and no silver *shekels*. Hill also says that circumstances must decide what number of *drachms*, varying from 4 to 2, *the stater* contained. In point of fact, these terms have served to obscure the structure of the Greek coin-system, suggesting that the lower units are derived from an arbitrary coin-weight. In any case, the *staters* and *drachms* of the various systems are not comparable, but the lower fractions can be shown to be so. The value of Head's great work is sadly marred, because in many cases he is content to describe coins in terms of the *stater*, *drachm* and *obol* of the system to which he assigns them without giving their weights. When tabulating the systems, too, a very wide range is given to the *stater*. The British Museum *Guide* gives the Phocaean as 254–248 grains, the Persic as 173–145 grains and the Phoenician as 220–215 grains. The discussion

is further complicated by the assertion that some systems are based on gold and others on silver. Ridgeway asks: 'Why did the Euboeans take the Lydian *gold* standard of 130 grains for their electrum and silver instead of the Lydian *silver* stand of 172·9 grains?' But being bimetallic these two standards are one and the same, 130 grains of gold (the approximate weight of the gold *shekel*) being worth at a gold:silver ratio of 13⅓:1 ten silver coins weighing 173·3 grains, not 172·9 grains. Moreover, the gross silver equivalent of the gold *shekel* (the Daric) which is 1733 grains can be made into 20 coins of 86·6 grains or 30 or 57·7 grains, giving two series of fractions and multiples based upon 1/20 and 1/40 of the silver equivalent at 13⅓:1.

If

$$1/40 = 43{\cdot}3 \text{ grains and } 1/30 = 57{\cdot}7 \text{ grains}$$

then

$$2 \times 1/40 = 86{\cdot}6 \text{ grains} \qquad 2 \times 1/30 = 115{\cdot}4 \text{ grains}$$
$$3 \times 1/40 = 130 \text{ grains} \qquad 3 \times 1/30 = 173{\cdot}1 \text{ grains}$$
$$4 \times 1/40 = 173{\cdot}2 \text{ grains} \qquad 4 \times 1/30 = 230{\cdot}8 \text{ grains}$$
$$5 \times 1/40 = 216{\cdot}5 \text{ grains}$$

Also

$$1\tfrac{1}{2} \times 1/40(130/2) = 64{\cdot}9 \text{ grains and } 3/4 \times 1/40(130/4) = 32{\cdot}5 \text{ grains}$$

and $3/4 \times 1/40(32{\cdot}5) \times 6 = 195$ grains.

These fractions are within certain limits constantly found in the Greek systems of coinage. Their organization is derived from the fact that their basis lies in bimetallism. Even if gold is not coined, the weights of the silver coins are related to the price of gold, which, though bought as bullion, would often have to be paid for in silver coins. The *Daric* and *siglos* persisted within the Persian sphere of influence unchanged, and there is some evidence that the system also persisted in the Mediterranean. Hill pointed out that the issues of Evagoras I preserve the gold-silver ratio of 13⅓:1, for his Au 31·5 grains would be worth 100 of his Ar51, though the ratio here is actually 13:1. Philip of Macedon's Au133 grains would be worth 15 of his Ar112 grains at a ratio of 12½:1. Alexander continued Philip's 'heavy' *Daric* of 135 grains, but Demetrius, Euthydemus II and Antimachus have silver tetradrachms of 260 grains, which are the equivalent of 3 *sigloi* of 86·66 grains at the old ratio of 13⅓:1. These would imply a *Daric* of 130 grains. In the Indo-Persian region, therefore, it would seem that the old weight of the *Daric* (the *shekel*) and the old gold-silver ratio did persist.

Gardner bases his treatment of coinage on the opinion that there were three principal monetary systems in the Greek world, 'whence all, or almost all others were derived'. These were:—

(1) The gold system, exemplified by the gold *staters* issued by Croeseus *and* the Persians.

(2) The silver system exemplified by the silver *staters* issued by the people of Aegina.

(3) The bronze system in partial use in the Greek cities of Italy and Sicily, and probably derived from the original inhabitants of these countries.

Gardner, therefore, believes that all the Greek systems, except the Aeginetic, and the 135 *grain stater*, which he derives from Egypt, have a common basis. With this in mind, it is possible to group the systems as set out in the British Museum *Guide*, not merely according to the estimated weights allotted to them, but according to the weights of the coins studied as inter-related fractions:—

(1) The *PHOENICIAN*, *PERSIAN* and the *BABYLONIAN*, which are given the following weights:—

210–225 grains, 157–145 grains, 167 grains.

There is among numismatists, almost complete agreement based on the higher coin-weights, that the Phoenician tetradrachm actually weighed 224 grains (14·56 *grammes*). From this the following values can be deduced which are well supported by the weights of the smaller coins:—

1/4 × 224 = 56 grains	1/4 × 168 = 42 grains
2 × 56 = 112 grains	42 × 3 = 126 grains
3 × 56 = 168 grains	42 × 2 = 84 grains

1/4 × 126 = 31·5 grains

In this system at a ratio of 13⅓:1 a gold coin of 126 grains is worth 1680 grains of silver, that is to say, 10 silver coins of 168 grains, or 20 silver coins of 84 grains, or 30 silver coins of 56 grains, or 40 *silver* coins of 42 grains.

(2) The *EUBOIC-ATTIC*, *EUBOIC-SAMIAN* and *CORINTHIAN*, which are given the following weights:—

133 grains, 268 grains, 267 grains, 133 grains.

The wide distribution of the Euboic system and the fact that it was used by Alexander and others for gold, side by side with the strict Phoenician for silver, creates a certain uncertainty about its history which requires exhaustive examination. But it may be said that it is likely that the Euboic *tetradrachm* was 268·8 grains (17·47 *grammes*). From this, which is derived from a study of the fractions, the following values can be deduced:—

1/2 × 268·8 = 134·4 grains	2 × 44·8 = 89·6 grains
1/2 × 134·4 = 67·2 grains	2 × 89·6 = 179·2 grains
1/3 × 134·4 = 44·8 grains	1/3 × 179·2 = 59·7 grains

1/4 × 134·4 = 33·6 grains.

In this system, a gold coin of 134·4 grains at a ratio of 13⅓:1 is worth 1790 grains of silver, that is to say, 10 silver coins of 179 grains, or 20 silver coins of 89·6 grains, or 30 silver coins of 59·7 grains, or 40 silver coins of 44·8 grains.

(3) The *PHOCAIC*, the *stater* of which is given as 254 grains. There is some agreement that the Phocaic *tetradrachm* should be at least 256 grains and an examination of the weights of the smaller coins suggests that it might well be 256·8 grains (16·69 *grammes*). From this the following values can be deduced:—

$1/2 \times 256{\cdot}8 = 128{\cdot}4$ grains	$2 \times 85{\cdot}6 = 171{\cdot}2$ grains
$1/2 \times 128{\cdot}4 = 64{\cdot}2$ grains	$1/3 \times 171{\cdot}2 = 57{\cdot}06$ grains
$1/3 \times 128{\cdot}4 = 42{\cdot}8$ grains	$1/4 \times 128{\cdot}4 = 32{\cdot}6$ grains

In this system, a gold coin of 128·4 grains at a ratio of $13\frac{1}{3}$ is worth 1712 grains of silver, or 20 silver coins of 85·6 grains, or 30 silver coins of 57·06 grains, or 40 silver coins of 42·8 grains.

An exhaustive analysis of the weights of the numerous issues, arranged both regionally and according to period, would add precision to these estimated weights. The groups of coins which numismatists have identified by means of the inscriptions or symbols they bear, or by a study of their style as works of art, provide the samples for analysis. Opinions based on such studies, where the expertise is sound, provide acceptable grounds for dating. Variations in the weights of coins due to the passing of time or to geographical factors doubtless exist, and the gold-silver ratio must have varied from time to time. But the persistence of the Phoenician system is a very striking fact to which attention must be paid. This series of organized weights was maintained through the centuries, whatever the markets' reaction to the supply of gold and silver may have been. As possible checks upon the accuracy of the estimates here put forward, it is interesting to note that the Euboic value of 67·2 grains seems to be linked with the *litra* of 13·5 grains for $67{\cdot}2 \times 4 = 268{\cdot}8$ grains and $20 \times 13{\cdot}5 = 270$ grains. The Euboic *hecte* $44{\cdot}8 \times 5 = 224$ grains, which is the Phoenician *tetradrachm*. The Phocaic *hecte* of $32{\cdot}6 \times 6 = 195{\cdot}6$ grains, which approximates to the Aeginetic *didrachm*, $3 \times 32{\cdot}6 = 97{\cdot}8$ grains, giving the *drachm*. There is here, therefore, a possibility of a systematic exchange, based upon the smaller, more commonly used, coins without which it is hard to believe these systems could have survived.

My thanks are due to Professor E. H. Warmington, Dr. A. D. H. Bivar, Dr. H. W. F. Saggs, and especially to Mr. Henry Hodges for the long hours he has been willing to devote to discussion of our common interests.

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Traditional Egyptian Sun Hymns of the New Kingdom

by H. M. Stewart

The hymns discussed here, although having in some cases originated in the temple liturgy, all occur in private funerary inscriptions, and it is chiefly from the latter standpoint that they are considered.[1] Besides their intrinsic interest the texts will, it is hoped, have a practical use in filling lacunae and clarifying corruptions in the many parallels which are still unpublished. To aid identification of these a concordance is given at the end. While the period represented is mainly that of the New Kingdom, some later material is quoted for comparison.

During the dynastic period the solar religion was associated primarily with the kingship. From as early as the Fourth Dynasty the pharaohs had doctrinally been sons of the sun-god Re, and were held to become assimilated with him after death. Since ideas concerning the royal hereafter tended in course of time to become democratized,[2] it was largely in its royal aspect that the solar afterlife was represented in private funerary belief. At the end of the Old Kingdom the prospect of sailing across the sky in the barque of Re was claimed by courtiers,[3] and during the Middle Kingdom commoners everywhere hoped to join the god or even to be identified with him.[4] Such ideas did not necessarily conflict with Osirian beliefs, for the *ba* (soul) was thought to have almost unlimited freedom of movement and manifestation.

Apart from motives of prestige the popularity of the solar hereafter owed much to the symbolism of rebirth which attached to the sunrise. This symbolism was reinforced through the dual rôles of the sky-goddess Nut as mother of the sun-god and protector of the dead, who were anciently believed to dwell in the stars. Already in the Pyramid Texts she was identified with the sarcophagus and

[1] The subject of these hymns with their possible bearing on the temple liturgy was suggested to the present writer by Dr. R. O. Faulkner, whose advice on many points is gratefully acknowledged. Thanks are due also to the authorities of the British Museum and of the Metropolitan Museum of Art, New York, for permission to quote unpublished material.

[2] Moret, A., 'L'accession de la plèbe égyptienne aux droits religieux et politiques sous le Moyen Empire' in *Recueil d'études égyptologiques dédiées à la mémoire de J.-F. Champollion* (Paris, 1922), 331 ff. Bonnet, H., *Reallexikon der ägyptischen Religionsgeschichte* (Berlin, 1952), 346 ff.

[3] There is some evidence that it was the verbal formulae rather than the ideas which were valued, for this voyage seems at first to have been re-interpreted simply as the Nile-crossing to the necropolis. See Kees, H., *Totenglauben und Jenseitsvorstellungen der alten Ägypter*, 2nd ed. (Berlin, 1956), 108 ff.; Bonnet, *op. cit.* 346.

[4] Kees, *op. cit.* 259 ff.

the burial chamber,[5] and during the New Kingdom coffins were frequently decorated with figures of the goddess, from whom it was hoped the deceased would be reborn like the sun.[6]

THE ORIGINS

The inclusion of hymns to the gods in private funerary inscriptions began during the Middle Kingdom perhaps as a result of the process of democratization described above.[7] Of the solar examples a large number dating to the New Kingdom were traditional, some deriving from the Theban liturgy and others from the royal funerary ritual. While the relevance of such hymns to the cult of Amen-Re is obvious, their significance in funerary ceremonies is perhaps less so. The latter, intended to restore the faculties of the dead, and the temple rites, which centred on the revivification of the cult image at dawn, besides having common Osirian origins, were both permeated by Heliopolitan influences[8], and culminated in the recitation of hymns, meant in the funerary cult to secure for the deceased eternal life like Re.[9]

The following liturgical hymns to Re or Amen-Re occur in private funerary inscriptions:—

(a) A morning hymn (no. I below), described as 'an adoration of Amun at dawn', in the Theban liturgy.

(b) Another example in the same ritual, there entitled simply 'A recitation for adoring Amun', but elsewhere addressed to Amen-Re.[10] It is not markedly solar in content.

(c) A hymn to the setting sun (no. I*), entitled 'Song of the Two Regions to be recited in the evening', from the so-called 'Ritual of Amenophis I' (sources B C). This ceremony, which was not performed exclusively for the same pharaoh, may, as Fairman suggests,[11] have been for the benefit of the royal ancestors, and have formed part of the ordinary daily liturgy. A late copy of the hymn, inscribed in the temple of Philae (source L), is addressed to Osiris, who had acquired many of the attributes of the sun-god (see p. 36).

[5] Rusch, A., *Die Entwicklung der Himmelsgöttin Nut zu einer Totengottheit* (Leipzig, 1922), 17 ff.
[6] *Ibid.* 27 ff.
[7] Cf. Müller, H. W., 'Die Totendenksteine des Mittleren Reiches' in *Mitt. Kairo*, IV (1933), 197 ff. Moret's inference in *Bull. Inst. fr. arch. or.* 30 (1931), 729, that commoners were earlier denied the right of worship is refuted in Garnot, J. S. F., *L'hommage aux dieux sous l'Ancien Empire* (Paris, 1953), 16.
[8] Blackman, A. M., 'The House of the Morning' in *JEA* 5 (1918), 148 ff.
[9] See (d) opposite.
[10] Stewart, H. M., 'Note on an Egyptian Statuette: Brit. Mus. 1735' in *Bull. Inst. Arch.* 5 (1965), 67.
[11] In Hooke, S. H., *Myth, Ritual and Kingship* (Oxford, 1958), 100 ff.

(d) A series of morning invocations of Re, used both in the liturgy of Amen-Re and in the mortuary service of the king.[12] It accompanies an incense offering made in the former case so that the king (who is theoretically the officiant) 'may be granted life eternally like Re', and in the latter 'while (the king) is spiritualized in his temple which is in the west of Thebes'. Already in the reign of Tuthmosis III this ritual had passed into the private funerary cult, where it was associated with the ceremony of 'Opening the Mouth'.[13]

Where temple hymns are paralleled in non-royal funerary inscriptions, it is possible that they occupied a corresponding place in the ceremonies of revivification which formed part of the burial rites and subsequent mortuary cult. Some such practical use is indicated by the opening rubric to the Book of the Dead, where solar hymns often appear: 'Beginning of the recitations for going forth into the day, of the praisings and glorifications . . . which are to be uttered on the day of burial.'[14]

Although liturgical texts may have been adopted for private funerary use by priests, the title 'Song of the Two Regions' (i.e. Upper and Lower Egypt) given to certain hymns mentioned above suggests that these were already known to the general public, who may perhaps in the outer courtyard of the temple have joined in the daily worship.

Not all traditional hymns need, however, have been of temple or of funerary origin. Some may have been literary compositions. Others, irrespective of their original source, which occur on the *verso* of works such as *The Teachings of Amenemope* (no. I, G below) and *The Admonitions of Ipuwer*[15] (no. XII, B; no. II*, F), would also appear to have been valued for literary reasons.

THE DOCUMENTARY SOURCES

As early as the Eleventh Dynasty the continuing democratization of the royal funerary cult extended to the architecture of tombs, of which some private examples at Abydos incorporated a brick pyramid.[16] It is uncertain when this fashion was adopted in Thebes, where royal tombs and cenotaphs afforded

[12] Christophe, L.-A., 'La salle V du temple de Sethi Ier à Gournah' in *Bull. Inst. fr. arch. or.* 49 (1950), 129 ff. A similar hymn, although not a true parallel, accompanied the ceremony of 'Offering Maat' in Karnak. See Moret, A., *Le rituel du culte divin journalier en Égypte* (Paris, 1902), 138 ff.

[13] Davies, N. de G., *Tomb of Rekh-mi-Re* (New York, 1943), 77, pls. 99, 97 (in that order). The same text in Christophe, *loc. cit.* Less exact parallels occur in Davies, *Tomb of Neferhotep* (New York, 1933), I, pl. 37; Budge, E. A. W., *Greenfield Papyrus* (London, B.M., 1912), pl. 83. The latter work is cited below as Budge, *Greenfield.*

[14] Budge, E. A. W., *The Book of the Dead*, I, Text (London, 1898 ed.), 18. Cited as Budge, *BD.*

[15] See Gardiner, A. H., *Admonitions of an Egyptian Sage* (Leipzig, 1909), 1.

[16] Mariette, A., *Abydos*, II (Paris, 1880), 38 ff., pls. 66 f.

ample precedents.[17] From the reign of Tuthmosis III, however, cap-stones of private pyramids are found there[18], as well as references in funerary inscriptions to the soul's perching in bird form on the point.[19] The solar significance which the outer parts of the tomb thus acquired is of great importance for our documentary sources, since architectural features usually bear texts appropriate to their function and symbolism.[20]

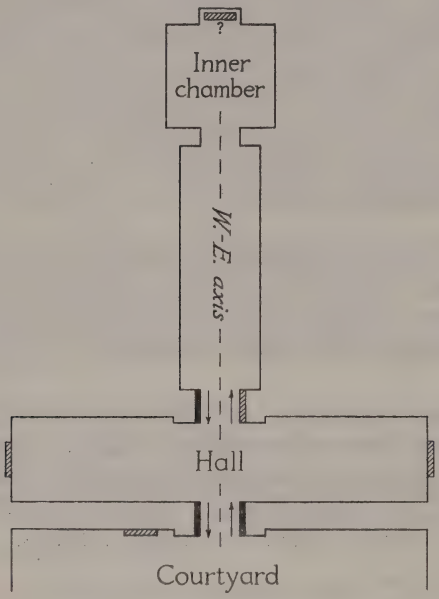

Fig. 1 Plan of a typical Theban tomb showing the principal positions of sun-hymns and the directions of worship. The more usual sites are in black; others are hatched.

Although the separate faces of the pyramidion (cap-stone) afforded room for brief formulae only, the elaboration of solar hymns resulted at the time of Amenophis III in the occasional division of examples between the faces (no. II, D=no. III, B). A similar interest in longer texts is evident in the development, described elsewhere, of a type of statuette,[21] which seems to have occupied a niche in the pyramid. These figurines may sometimes have been replaced by small, round-topped stelae, which Bruyère likened to *lucarnes* (windows), and which showed the worshipper addressing a hymn or prayer to the sun-god.[22]

[17] Edwards, I. E. S., *The Pyramids of Egypt*, 2nd ed. (Harmondsworth, 1961), 243 ff. Vandier, J., *Manuel d'archéologie égyptienne*, II, pt. 1 (Paris, 1954), 158 ff., 210 f., 218 ff.

[18] Florence Mus. 2608: Porter B. & Moss, R. L. B., *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, etc.*, 2nd ed., I, pt. 1 (Oxford, 1960), 461 (D.1).

[19] Hermann, A., *Die Stelen der thebanischen Felsgräber der 18. Dynastie* (Glückstadt, 1940), 110 f.

[20] For examples from the various positions in the tomb see the source-lists preceding each text.

[21] Stewart, H. M., 'Egyptian Funerary Statuettes and the Solar Cult' in *Bull. Inst. Arch.* 4 (1964), 165 ff., pl. 12. All statuettes mentioned in the source-lists below are of this type.

[22] Bruyère, B., *Rapport sur les fouilles de Deir el-Médineh, 1923–24* (Cairo, 1925), 12 ff.

While Theban private tombs were being influenced by royal funerary architecture, a complementary development in their decoration was taking place as a result of the identification of the local god Amun with Re (see below). Prayers to Amen-Re inscribed in the outer parts of the tomb, e.g. on the opposite thicknesses of the doorway and sometimes on stelae in the façade, became increasingly solar in character until, from about the middle of the Eighteenth Dynasty, the doorway inscriptions were often differentiated as hymns to the rising and the setting sun, the worshipper being represented facing outward (usually eastward) on the left and inward on the right respectively, instead of outward on both sides as previously.[23] Within the tomb such hymns had their most logical place along the axis in line with the entrance, e.g. on the thicknesses of inner doorways,[24] on ceilings, on the sides of pillars, and on pair statues of the owner and his wife, which may have occupied a niche in the rear wall of the inner chamber.[25] Occasionally, however, the hymns appear on other suitably oriented parts such as the end walls of the entrance hall in place of more conventional prayers to Amen-Re (Fig 1).[26]

Apart from the examples at El Amarna very few important tombs of New Kingdom date have been found outside Thebes. Those in the north, most of which were constructed on level ground and not rock-cut, were probably demolished in antiquity, but the remains now in museums include pyramidions, door jambs, pillars, stelae, stelephorous statuettes, etc. bearing solar inscriptions.[27] As far south as Aniba tombs show the same influence in their pyramidal form,[28] their representations of sun-worship in the doorways,[29] etc. Although little has survived of the inscriptions, in one tomb a long sun-hymn appears on a false-door stela probably from the chapel.[30]

Funerary texts which affected the dead man's welfare in the hereafter, and which had to be readily accessible to him, were inscribed during the Middle Kingdom on the large, rectangular coffins then in use. After the change to the anthropoid style of mummy case during the latter part of the Second Intermediate Period most of these texts were transferred to papyrus and usually placed with the body. Few papyri which may date to the Eighteenth Dynasty

[23] The early stages of development are described in Schott, S., *Das schöne Fest vom Wüstentale* (Mainz, 1952), 12 f.

[24] More usually these texts occur on the left only. The right, being partly hidden by the door-leaf when open, was less important inscriptionally. See Davies, *Tomb of the Vizier Ramose* (London, 1941), 8; Fakhry A. in *Ann. Serv.* 42 (1943), 504.

[25] Berlin 6910: *Aeg. Inschr*, II, 70 f.; Brit. Mus. 968: Stewart in *JEA* 33 (1957), 3 ff. (= no. IV, B below). See also Hermann, *op. cit.*, 20.

[26] No. VI,C; Hermann, *op. cit.* 58 f.; Sethe, *Urk.* IV, 942 ff.

[27] Examples of various kinds occur in the source-lists.

[28] Steindorff, G., *Aniba*, Text, II (Glückstadt, 1937), 47 ff., 61 f.

[29] *Ibid.* 242.

[30] *Ibid.* 62 ff., frontispiece.

contain sun-hymns, but as the latter were already common in other types of funerary inscription, their initial absence in papyri may have been due simply to a feeling that they were less suited to a document which was intended for the burial chamber. Their eventual inclusion coincided with a gradual blurring of the distinction between the 'solar' and the 'Osirian' parts of the tomb,[31] for during the Nineteenth Dynasty, probably under the continuing influence of royal mortuary customs, themes relating to the netherworld began to predominate in the scheme of decoration.[32] Sometimes prayers to Osiris appeared in outer doorways in place of hymns to the setting sun.[33] The resulting antithesis of solar and Osirian motifs, paralleled in the introductory hymns to Re and Osiris which occur in some funerary papyri, expressed succinctly the dual nature of the hereafter: 'He places his soul in the sky with Re; his body is placed in the netherworld with Osiris'[34] (cf. no. III, note 4).

THE HYMNS

(A) CONTENTS

Even when addressed simply as Re, the sun-god of the New Kingdom hymns was often a composite figure comprising the characteristics of several gods who had at various times been identified with him. At least as early as the Fifth Dynasty his cult had been merged with that of the Heliopolitan Atum,[35] who is represented in the Pyramid Texts as a primeval cosmic deity. The equation of the latter in turn with Khepri,[36] the scarab-god, 'who came into existence (*ḫpr*) by himself' (*Pyr.* 1587b), served to reinforce Re's primacy. At Heliopolis Re was identified also with a local form of the sky-god Horus, represented as a falcon, who had at Hierakonpolis been considered as manifest in the predynastic rulers of Upper Egypt, and had later become the dynastic god. In his Heliopolitan form of Harakhti ('Horus of the horizon') he was already solarized as Re-Harakhti during the Fifth Dynasty.[37] In course of time Khepri came to represent the morning, Harakhti the midday, and Atum the evening sun.

Early association with the State increased the prestige of the solar cult, and from the Middle Kingdom onwards several other local gods such as Min, Amun, Khnum, Monthu and Sobek were assimilated to Re as Min-Re, etc.[38] The

[31] For this terminology see Bruyère, *op. cit.* 7 ff.
[32] Kees, H., *Der Götterglaube im alten Ägypten* (Leipzig, 1941), 389 f.
[33] Theban tombs 25, 26, 194, 263, 296, 331, 341, 406, 409.
[34] Birch, S. in *ZÄS* 6 (1868), 61.
[35] Kees, *op. cit.* 230.
[36] *Ibid.* 215 f.
[37] *Ibid.* 233 f.
[38] Sethe, K., *Amun und die acht Urgötter von Hermopolis* (Berlin, 1929), 111 f.

Theban Amun, initially an obscure god of the air and wind, already resembled in many ways Min of Coptos, with whom he shared not only a similarity of name, but perhaps also a common origin.[39] At the end of the Middle Kingdom Amun was identified with him as Min-Amun, thereby acquiring several characteristics which became important attributes of Amen-Re. One of these was the overlordship of the desert and of foreign lands, a status which Min possessed as early as the Eleventh Dynasty owing to the position of Coptos at the beginning of the trade route to the east through the Wadi Hammamat.[40] Another of Min's attributes, that of fertility god, was absorbed naturally in Amen-Re's character of self-generating solar deity and universal creator.

The qualities of the sun-god during the early Eighteenth Dynasty reflected also the benevolent authoritarianism of the Middle Kingdom, when the pharaoh was often represented as the good shepherd, the just ruler who protected the weak.[41] With the subsequent expansion of the empire Amen-Re became the imperial god, creator and protector not only of the Egyptians but of all races.[42] The most celebrated expression of this universal benevolence is the hymn (no. IV below) on the stela of Suti and Hor, *temp.* Amenophis III.[43] Already in a text dating to the reign of Tuthmosis III, however, Amen-Re was described as 'the divine falcon who begot the Nine Bows (i.e. peoples neighbouring Egypt)',[44] a concept made more explicit in another from about the time of Amenophis II: 'Atum, who made mankind, who distinguished their natures, nourished them, and differentiated their skins one from another',[45] and echoed in the Amarna hymn: 'Their tongues are divers in speech and their forms (varied) likewise. Their skins are distinguished, for thou hast distinguished the nations.'[46]

Although associated primarily with Amen-Re, this universalist character was soon acquired by other deities. In a prayer following no. III, D (*temp.* Tutankhamun) Thoth is described as 'he who differentiates the language of one country from that of another.'[47] At a later date Ptah is addressed in terms which are not only universalist but partly solar.[48] While this tendency may often have

[39] See Wainwright, G. A., 'The Origin of Amun' in *JEA* 49 (1963), 21 ff. and literature cited there.

[40] Selim Hassan, *Hymnes religieux du Moyen Empire* (Cairo, 1928), 138 f., 166 f.; Bonnet, *op. cit.* 464.

[41] Müller, D., 'Die gute Hirte' in *ZÄS* 86 (1961), 126 ff.

[42] Breasted, J. H., *Development of Religion and Thought in Ancient Egypt* (New York, 1912), 312 ff.

[43] The implications of this hymn are discussed in Breasted, *loc. cit.* and in Garnot, J. S. F., *Aspects de l'Égypte antique* (Cairo, 1959), 67 ff.

[44] Sethe, K., *Urkunden des ägyptischen Altertums*, IV: *Urk. der 18. Dynastie* (Leipzig, 1906–9), 943. A passage in the *Pyramid Texts* (1655) in which Atum is said to have begot the Ennead in their name of Nine Bows is a pun of doubtful significance.

[45] Mariette, A., *Les papyrus égyptiens du Musée de Boulaq* (Paris, 1871–6), II, pl. 11. Grébaut, E., *Hymne à Ammon-Ra* (Paris, 1874), 11. The last phrase of the quotation occurs also on a stela of the late Eighteenth Dynasty: Moret, A., *Catalogue du Musée Guimet* (Paris, 1909), 19 (no. 21).

[46] Davies, N. de G., *Rock Tombs of El Amarna* (London, 1903–8), VI, pl. 27 = Sandman, M., *Texts from the time of Akhenaten* (Brussels, 1938), 95.

[47] Černý, J., 'Thoth as the creator of languages' in *JEA* 34 (1948), 121 f.

[48] Wolf, W., 'Der Berliner Ptah-Hymnus, P. 3048' in *ZÄS* 64 (1929), 17 ff.

resulted from a desire to glorify the local god, the readiness to attribute to each the same basic qualities is itself indicative of preferences which made syncretism possible.[49]

The assimilation of Re and Osiris (cf. p. 30)[50] seems to have been due to more complex causes, chief among which may have been the identification of Osiris as a dead king with Re. Where, however, in a reference to the sun-god's nightly journey through the netherworld it is said that '(the dead) worship thee when thou reachest them with this thy face of Osiris' (no. II*, note 6), the allusion may be rather to the popular equation of Osiris with the moon, which was regarded as the sun's deputy.[51] Elsewhere Thoth is more usually represented in that rôle.

In general the hymns are confined to certain well-established themes,[52] which may be divided into the following categories.

Iconography. Description of the god's conventional mode of representation, insignia, etc. is particularly common in earlier hymns [53] and especially those in the temple liturgy.[54] Since many Egyptian gods were endowed with the attributes of kingship,[55] hymns often refer to the various crowns and sceptres. In the case of the sun-god the crowns of Upper and Lower Egypt, the double plumes and uraei also symbolized in somewhat tortuous fashion the eyes of Horus, i.e. the sun and the moon[56] (no. V*, note 1).

Cosmogony. According to the Heliopolitan theology Re-Atum emerged self-created from the primeval water, which was personified as the god Nun. Although the latter was sometimes styled as 'father' of the sun-god (no. I*), this seems to have had no genealogical implication, and in one hymn Re is said to have made the Nun.[57] In order to reinforce Re's primacy the early belief mentioned above, that the sun and the moon were the eyes of the sky-god Horus, was, although still preserved (no. V*), usually modified so that they became the eyes of Re[58] (no. 111*, note 4; no. IV*, note 3). Despite such efforts at reconciliation, however, certain popular traditions survived. The commonest of these represented Re as the son of the sky-goddess Nut, who was thought to swallow him at night and bear him anew each morning (nos. XV, II*). The occasional

[49] For the converse identification of Amen-Re with Ptah, Hapi and other gods see Gardiner, A. H., *Hieratic Papyri in the Brit. Mus.*, Third Series (London, 1935), I, 35; Scharff, A., *Aegyptische Sonnenlieder* (Berlin, 1922), 88 ff.

[50] Kees, *Totenglauben*, 155 ff.; Bonnet, *op. cit.* 574.

[51] Kees, *op. cit.* 144 ff.

[52] Cf. Scharff, *op. cit.* 1 ff.; Barucq, A., *L'expression de la louange divine et de la prière dans la Bible et en Égypte* (Cairo, 1962), 252 ff.

[53] Selim Hassan, *op. cit.*, *passim*.

[54] Moret, *Rituel*, 67 ff., 121 ff. Cf. Barucq, *op. cit.* 195 ff.

[55] Zandee, J., 'Le roi-dieu et le dieu-roi dans l'Égypte ancienne' in *Numen* 3 (1956), 230 ff.

[56] Erman, A., *Hymnen an das Diadem* (Berlin, 1911), 11 ff.

[57] Budge, *BD* 9.

[58] Bonnet, *op. cit.* 733 ff.

description of Hathor and Isis (no. III with note 1), who were also sky-goddesses, as 'mother' of the sun-god would seem on the other hand to have implied only a protective relationship. More problematical is the apparent mention, discussed in no. I*, note 6, of the goddess Naunet (the netherworld sky) in the same rôle.

References occur more rarely to the Hermopolitan tradition that the sun-god was hatched from an egg[59] on the mythical Island of Flames,[60] which emerged from the primeval water, or to his appearance from a lotus-flower after the fashion of the Memphite god Nefertem.[61] There was no attempt at consistency in these images, which have their visual counterpart in the jumbled iconography of certain funerary papyri, etc. of the Late Period,[62] and are the result of a highly symbolic mode of expression.

Dominion. The local aspect of the solar cult is sometimes alluded to in epithets such as 'august prince who is in Heliopolis' and 'great *Benu*-bird, chief of his district'.[63] Re had, however, long been the supreme god of the land, 'he who overlooks the gods',[64] and in hymns of the New Kingdom Amen-Re as 'king of the gods' is said to receive their homage and obeisance.[65] By contrast his terrestrial power, although occasionally mentioned (e.g. no. IX), is on the whole little stressed in funerary texts, where it was perhaps considered less relevant.

In the netherworld Osiris was pre-eminent: 'Thou (Re) shinest there for the great god, lord of eternity, who rules the realm of the dead' (no. IV*). Hymns sometimes refer, however, to Re's traditional rôle, often assumed by the former, of judge of the dead (no. III*).[66]

Beneficence. While the character of 'good shepherd', which the sun-god shared with the king, receives its fullest expression in the universalist hymns discussed above, it is presented with more conventional scope in traditional texts,[67] where the god is, for example, described as 'one who does what is beneficial to all men, the lord of life, who makes the people prosper' (no. XIII).

[59] E.g. Grapow, H., *Religiöse Urkunden* (Leipzig, 1915–17), 55. See Bonnet, *op. cit.* 162 ff.

[60] E.g. Naville, É., *Das ägyptische Todtenbuch der 18. bis 20. Dynastie* (Berlin, 1886), I, Kap. 15B1 (all further references to this work, abbreviated as Naville, *Todtb.*, are by chapter). Cf. no. II below, note 3. See Sethe, *Amun*, 49; Bonnet, *op. cit.* 194.

[61] Naville, *Todtb.* 15A4, B1. See Anthes, R., 'Egyptian theology in the 3rd millennium B.C.' in *JNES* 18 (1959), 176 f., 209.

[62] Piankoff, A. and Rambova, N., *Mythological Papyri* (New York, 1957).

[63] Both in Virey, P., *Mém. Miss. arch. fr.* V (1889), 338 = *Rec. trav.* 7 (1886), 34.

[64] *Pyr.* 1479.

[65] Barucq, *op. cit.* 209 ff.

[66] Spiegel, J., *Die Idee vom Totengericht* (Glückstadt, 1935), 51 ff. Capart, J., 'Ra, juge des morts' in *Chronique d'Égypte*, 14 (1939), 232 ff.

[67] Barucq, *op. cit.* 188 ff.

He is said also to be 'gracious of heart when he is invoked',[68] and to answer the prayers of the departed spirits, to whom he brings light and warmth in his nightly journeys (nos. II*, IV*).

The solar cycle. The most frequently recurring themes are the sun-god's voyages across the sky in the day-barque and across the inverted vault of the netherworld in the night-barque, his joyful reception by the living and the dead, and the perils over which he must triumph before he can return to the upper world.

The day journey was thought to begin through the doors of heaven beyond the mythical eastern mountain of Bakhu, and end at the western mountain of Manu, where he was received by the welcoming arms of his mother Nut. According to an early belief, already recorded in the Pyramid Texts (2173), the solar barque was rowed by the stars, who represented the spirits of the dead,[69] and in the hymns of the New Kingdom the day journey is said to be accomplished by the circumpolar stars, 'those which can never set', and the night journey by the planets and dekan stars, 'those which can never weary' (no. VII).[70] Another idea represents the night-barque as being towed by the dead (nos. II, II*, IV*) sometimes in jackal form,[71] when they would appear to correspond to the jackal-headed 'Souls of Hierakonpolis', who are often depicted together with the falcon-headed 'Souls of Buto' (these two towns being the predynastic capitals of Upper and Lower Egypt respectively) singing the praises of Re.[72]

During his journey through the caverns of the netherworld (see nos. II*, IV*) Re had to overcome their various guardian demons, of which the most formidable was the serpent Apophis,[73] the embodiment of the natural phenomena of darkness, cloud, storm, etc., regarded as inimical to the sun-god (no. I*). While the traditional defender of the barque was the royal uraeus (nos. V, IV*, V*), aided by Thoth (no. VI) or more rarely by Seth,[74] the dead were also prepared against this encounter by means of spells in the Coffin Texts[75] or in the Book of the Dead.[76] A sun-hymn popular during the Late

[68] Selim Hassan, *op. cit.* 192.
[69] Bonnet, *op. cit.* 749 ff.
[70] Sethe, K., *Altägyptische Vorstellungen vom Lauf der Sonne* (Berlin, 1928), 282 ff.
[71] Berlin 7306: *Aeg. Inschr.* II, 132 f. See Bonnet, *op. cit.* 674 f.; Van Voss, M. H., 'The jackals of the sun-boat' in *JEA* 41 (1955), 127; Derchain, P., 'L'adoration du soleil levant dans le temple de Psammétique Ier à El Kab' in *Chronique d'Égypte*, 37 (1962), 262 f.
[72] Schäfer, H., 'Altägyptische Bilder der auf—und untergehenden Sonne' in *ZÄS* 71 (1935), 31 f. Derchain, *op. cit.* 257 ff.
[73] Bonnet, *op. cit.* 51 ff.
[74] *Ibid.* 704. Shorter, *Catalogue of Egyptian Religious Papyri* (London, B.M. 1938), 58.
[75] Buck, A. de, *Coffin Texts* (Chicago, 1935–62), II, No. 160; V, no. 414.
[76] Ch. 39. Cf. Sander-Hansen, C. E., *Die Texte der Metternichstele* (Copenhagen, 1956).

Period refers to 'the 77 rolls of Apophis',[77] a ritual for the latter's destruction, perhaps related to that practised in the temple of Amen-Re at Karnak.[78]

The sun-god's triumphant emergence into the upper world is celebrated joyfully by his crew, the gods, mankind, and all living creatures, sometimes typified by the apes, whose chattering heralds the sunrise. Of all the themes this universal acclamation greatly predominates in the hymns.

The visual aspect of sunlight is comparatively neglected apart from a few formal comparisons with gold (nos. III, IV, X), turquoise (no. III) and lapislazuli (no. V with note 2), the last two representing the green and blue of the earth and the sky respectively.[79]

Although the organization of the subject matter is generally rather loose, references to the solar cycle, being concerned with narrative events, are better served, and often present the following sequence: (a) appearance of the sun-god at dawn or at sunset, (b) greetings by the gods, the living and the dead, (c) the overthrow of Apophis (nos. II, V–VII, XII, III*, IV*).

In discarding these diverse mythological elements and concentrating on the sun-god's universal beneficence the Amarna hymnodists achieved a better integration, and gave their compositions a strong central theme which could be developed at length. A tendency in this direction already occurred in earlier hymns (e.g. no. IV), although apparently without any doctrinaire motive. Creatively, however, the wholesale rejection of traditional ideas must have been somewhat inhibiting, for the Aten texts became in many cases as stereotyped in language as their predecessors had been.[80]

There is little that might be called spiritual content either in the traditional or in the Amarna hymns. Certain prayers addressed to Amen-Re and other deities from the late Eighteenth Dynasty onwards are noted for their expressions of penitence,[81] but these appeals were on behalf of the living, who saw in their afflictions a mark of the god's displeasure. On the rare occasions when confessions of fault appear in a funerary context, they are usually far from being disinterested—cf. Ch. 14 of the Book of the Dead, entitled 'A charm for driving out anger from the heart of the god ' (Budge, *BD* 34 f.).

[77] Allen, T. G., 'Some Egyptian Sun Hymns' in *JNES* 8 (1949), 351 f.

[78] Faulkner, R. O. F., *Papyrus Bremner-Rhind* (Brussels, 1933) and in *JEA* 23 (1937), 166 ff.; 24 (1938), 41 ff.

[79] Grapow, H., *Die bildlichen Ausdrücke des Aegyptischen* (Leipzig, 1924), 54 ff.

[80] Davies, *El Amarna*, I, 46.

[81] Gunn, B. in *JEA* 3 (1916), 81 ff.; Gardiner, A. H. in *JEA* 14 (1928), 10 f.; Barucq, *op. cit.* 388 f.

(B) FORM

Egyptian hymns are often preliminary to prayers. While in the funerary cult these are for the deceased, in the ordinary temple ritual they are normally for the reigning king,[82] although predecessors appear to have been provided for in some rites (p. 30).

The hymns consist mainly of honorific titles, epithets, and participial expressions,[83] the whole falling naturally into short verses, which are divided in some hieratic texts by points. This emphasis on the divisions suggests the presence of some metrical scheme, and Coptic analogies would indicate a basis in grammatical stresses in which unaccented syllables were not counted.[84] Interpolations and omissions in parallel texts show, however, that any such scheme must have been very free.

The commonest structural element is parallelism, perhaps the simplest means of securing formal cohesion. Paranomasia, apart from its inherent rôle in Egyptian mythology,[85] is less evident as a purely literary device than in some other compositions. Grammatically, a peculiar vacillation between the 2nd and the 3rd person, which is characteristic of Egyptian participial clauses,[86] is often obtrusive in translation.

Titles

Hymns are often introduced by the formula: *rdìt ỉꜣw n*, 'to give praise to.'[87] More usual, however, is the expression *dwꜣ*, 'to adore'.[88] Although originally having morning connotations, this word had come to be applied to hymns recited at any time,[89] and during the New Kingdom appears very often in the titles: *dwꜣ Rʿ ḫft wbn.f/ḥtp.f m ꜣḫt ỉꜣbtt/ỉmntt nt pt*, 'To adore Re when he rises/sets in the eastern/western horizon of heaven'. From the middle of the Eighteenth Dynasty the form: *dwꜣ Rʿ ḫft wbn.f r ḫprt ḥtp.f m ʿnḫ*, 'To adore Re when he rises until there occurs his setting in life', became very common on funerary monuments such as stelephorous statuettes (no. II, B, F, H, J, Q, T, U), which show the deceased in a perpetual attitude of worship.

In practice these titles were virtually interchangeable, and in some cases hymns to the rising sun were adapted for use at sunset (nos. III, B; V, C; VI, C).

[82] Barucq, *op. cit.* 403 ff.

[83] Zandee, J., *De Hymnen aan Amon van Papryus Leiden I 350* (Leyden, 1947), 127, 144.

[84] Erman, A., *Brüchstücke koptischer Volkslitteratur* (Berlin, 1897), 44 ff. Säve-Söderbergh, T., *Studies in the Coptic Manichaean Psalm-Book* (Uppsala, 1949), 3 ff. Fecht, G., 'Die Form der altäg. Literatur' in *ZÄS* 91 (1964), 11 ff.

[85] Morenz, S., 'Wortspiele in Ägypten' in *Festschrift Johannes Jahn* (Leipzig, 1957), 23 ff.

[86] Gardiner, A. H., *Egyptian Grammar*, 2nd ed. (Oxford, 1950), §509. Zandee, *loc. cit.*, where comparison is made with Hebrew psalms, e.g. no. 145.

[87] Barucq, *op. cit.* 55. Grapow, H., *Wie die Alten Ägypter sich anredeten* (Berlin, 1939–43), II, 69.

[88] Garnot, *L'hommage aux dieux*, 9 ff.

[89] E.g. Brit. Mus. 1163 (*temp.* Sebekemsaf II): Hall, H. R., *Hieroglyphic Texts*, IV (London, B.M. 1913), pls. 19, 21, where *dw3* is used with reference to the rising and the setting sun respectively.

Although a few hymns (e.g. nos. IX, XI) have distinctive titles which were associated with them for long periods, the number of copies is too few to preclude possible divergences elsewhere.

Like other types solar hymns were sometimes employed as charms for securing benefits in the hereafter. The compilation which forms Naville's ch. 15B3, for example, begins: 'Another chapter of the secrets of the netherworld for revealing the mysteries of the necropolis, for seeing the sun when it sets in the west', etc.

In temple ritual the hymn proper is normally introduced by the prescript *ḏd mdw*, 'Words to be spoken', and in funerary texts by a formula such as *N ḏd.f*, '(The deceased) says'.

Salutations

The opening most appropriate to morning hymns is *rs.k nfr*, 'Awake happily' (no. I) or *rs.k m ḥtp*, 'Awake in peace', the latter being particularly common in the temple ritual.[90] Most often, however, hymns of all types begin: *ỉnḏ ḥr.k*, 'Hail to thee', and in some examples (e.g. no. III*) its repetition, followed by various epithets, becomes a structural element. Other common openings are *ỉỉ.n.ỉ ḥr.k*, 'I have come to thee', which seems to have ritualistic implications, *ỉɜw n.k*, 'Praise to thee' (nos. X, V*), and the simple vocative (no. XIV).[91]

Because of its short-winded, segmental form and frequent lack of logical organization, the Egyptian hymnic style was ideally suited for filling given amounts of inscriptional space. This requirement arose with regard not only to monuments, but also to funerary papyri through the common practice of inserting the illustrations first.[92] Even where complete, however, hymns tended to be short, longer texts being very often compilations, each part of which has its separate introductory greeting, usually prefaced with the words '(The deceased) says'.

THE TRADITIONAL TEXTS

In the Ptolemaic papyrus used by Lepsius for his edition of the Book of the Dead[93] the part which he entitled Chapter 15 consists of a collection of hymns to the sun-god, and although the corresponding hymns in other papyri often

[90] Erman, *Hymnen an das Diadem*, 15 ff.; Blackman, A. M. & Fairman, H. W., 'A group of texts inscribed . . . in the temple of Horus at Edfu' in *Miscellanea Gregoriana* (Rome, 1941), 397 ff.

[91] On these salutations see also Barucq, *op. cit.* 77 ff.; Grapow, *op. cit.* II, 73 ff.; III, 60 ff.; Garnot, *op. cit.* 19 ff.

[92] Allen, T. G., *Egyptian Book of the Dead Documents in the Oriental Institute Museum* (Chicago, 1960), 3. Cited as Allen, *BD*.

[93] Lepsius, R., *Das Todtenbuch der Aegypter* (Leipzig, 1842). Cited by chapter as Lepsius, *Todtb*. For a photographic publication of the same papyrus see de Rachewiltz, B., *Il Libro dei Morti degli antichi Egiziani* (Milan, 1958).

differ from these, it has become customary to regard them as forms of the same chapter.[94] Thus Naville in his comparative edition, based on texts of New Kingdom date, classified his examples as Chs. 15 A1–4 (hymns to the rising sun) and B1–3 (hymns to the setting sun). Extending the series and also the nature of the sources, Allen has more recently added A5 and B4–5 largely from stelae of the Late Period.[95]

Of his own examples Naville was able to identify only two as traditional: Chs. 15 A2 and B3. Being confined to papyri, however, his study, unlike Allen's, took no account of the many parallels which occur in other types of funerary inscription, which are often earlier and tend, therefore, to be more authentic. Since Naville's work appeared (1886), a large amount of further source material has been published, both increasing the number of hymns which can be paralleled, and in the case of temple copies imparting to the texts a new significance.

Since many of the longer examples are compilations, it would seem preferable to classify them in terms of their components rather than as units. Naville's and Lepsius's designations sometimes overlap (see below). Except in referring to compilations, therefore, these systems are replaced by a simple enumeration of the basic texts, evening hymns being grouped in a separate series distinguished by an asterisk. Correspondence, sometimes partial only, with the standard editions is shown in the following table.

Text no.	*Naville's ch.* 15	*Lepsius's ch.* 15[96]
I	A1, cols. 17 ff.	
II	A1, cols. 2 ff.; A3, cols. 3 ff.	*f*, cols. 25 f.
IV	A3, cols. 14 ff	*c*, cols. 8 ff.
V	A2, cols. 2 ff.	
VI		*b*, cols. 3 ff.
X		*e*, cols. 18 ff.
XIV	A3, cols. 19 f.	
III*	B3, cols. 21 ff.	*g*, cols. 29ff.
IV*	B2, cols. 2 ff.	
V*	B3, cols. 11 ff.	*h*, cols. 36 ff.

The isolation of the traditional hymns from their contexts is less difficult than some commentators might lead one to suppose. In most cases the Egyptians quoted from the beginning. Owing, however, to modification to fit a given space, the original form of the endings is sometimes more uncertain.

[94] See Shorter, *op. cit.* 56.
[95] Allen in *JNES* 8, 349 ff.
[96] Sections *a* and *d* which, although paralleled in the New Kingdom, are not listed below, are prayers rather than hymns. On *a* see p. 44. The sources of section *i* lie outside the period dealt with.

Regarding the method of transmission, it is stated explicitly in one funerary papyrus that the text was 'set down, collated, checked, and corrected sign by sign'.[97] Confirmation of the use of a written source is provided elsewhere by insertion of the word *gm*, 'missing', to indicate passages lacking or destroyed in the original.[98] While variants which appear to have been due to similarity of signs tend to support this view, others more easily explained on oral grounds have suggested to some scholars a dictated source.[99] Certain forms, however, depart too widely to have resulted from either mishearing or miscopying. These and other errors such as haplography may originate in the memory as well as in reading, and it is possible that an abundant oral repertoire may account for the discrepancies and also for the curious medleys presented in some compositions. Even where copies were available, the experienced scribe must often have preferred to dispense with them.

Many of the traditional hymns date back to the Tuthmosid period, when the Heliopolitan cult appears to have been specially favoured.[100] Stylistically, most of them need not be earlier than the Eighteenth Dynasty, and are in fact distinguishable from those of the Middle Kingdom [101] with their monotonous succession of relative clauses and emphasis on the god's accoutrements and centres of worship. Compare also the first part of the hymn to Amen-Re in Bulaq papyrus no. 17, paralleled in the Second Intermediate Period,[102] with the remainder, most of which is undoubtedly of Eighteenth Dynasty composition.[103]

Although our sources are predominantly Theban, the texts were by no means peculiar to that area, two of them, nos. II and III, occurring from Saqqara to the Second Cataract. It is difficult to tell from internal evidence whether any of the hymns may have been of non-Theban origin. The absence of any reference to Amun is no criterion—it is omitted in some copies of no. I(A, D, E, F), which is actually from the Theban liturgy.

Where hymns enjoyed prolonged popularity, in some cases from the Eighteenth Dynasty to Ptolemaic times, certain variants became established. These would be of great value in dating inscriptions were it not for the fact that with typical conservatism the Egyptians often retained the old forms alongside the new ones, even in the same document. The papyrus of Ani,[104] for

[97] Naville, É., *The Funeral Papyrus of Iouiya* (London, 1908), pl. 33, cols. 29 f.
[98] Naville, *Le papyrus hiératique de Katseshni* (Paris, 1914), 3 ff.
[99] Allen, *BD* 3.
[100] Doresse, M. & J., 'Le culte d'Aton sous la 18e. dynastie avant le schisme amarnien' in *Journal Asiatique* 233 (1941–2), 181 ff.
[101] Selim Hassan, *op. cit., passim.*
[102] *Ibid.* 157 ff.
[103] Erman, A. & Blackman, A. M., *Literature of the Ancient Egyptians* (London, 1927), 283 ff.
[104] Budge, E. A. W., *Papyrus of Ani* (London, 1913), 2 vols. Cited as Budge, *Ani.*

example, contains one traditional hymn in three different versions—no. II(O), var. 2(A), var. 3(A)—all of which had become established. The danger of dating on such evidence may be illustrated further by a case where out of more than thirty parallels three contain an extensive variant in common (no. II, var. 1). This might suggest near contemporaneity. One, however, belongs to the Eighteenth Dynasty and another to the later part of the New Kingdom.

Compilations

Although many compilations appear to have been freely devised, certain forms became standard possibly as early as the Eighteenth Dynasty, the most popular being one which corresponds to Lepsius's Ch. 15. There it comprises two groups of hymns—one to the rising sun (sections *a–f*) and another to the setting sun (*g–i*). A continuous parallel to both groups occurs earlier in the Greenfield Papyrus [105] (Twenty-first Dynasty), but before then they appear separately, the morning hymns in the Papyrus of Ani[106] (Nineteenth Dynasty) and the evening ones in a modified form—excluding Lepsius's Ch. 15*i*, and with the order of sections *g* and *h* reversed—which corresponds to Naville's standard text Ch. 15B (from the late Eighteenth or early Nineteenth Dynasty).

The use of extracts from the compilations was also common, as is shown in the frequent association of hymns which are adjacent there. Individual components of Lepsius's text occur, however, at an earlier date apparently independently. Parts of sections *c* and *f* derive from hymns which were current during the Eighteenth Dynasty (nos. IV and II respectively), and *a* and *f* also contain funerary prayers of the same period.[107]

After the Twentieth Dynasty the funerary literature in general underwent further changes in which many of the older traditional hymns disappeared from the repertoire. Despite the addition of new examples, an increasing standardisation is evident, which from the Twenty-sixth Dynasty resulted in the establishment of the fixed form of Chapter 15 which occurs in Lepsius's text.[108]

The main object of the following edition is to present the hymns in their most authentic form. For this purpose the consensus among the earlier sources is taken. Temple texts, indicated by an obelisk (†), are, however, given due weight.

Abbreviations which have not already been established above are in accordance with Porter & Moss, *op. cit.* I, pts. 1 & 2.

[105] Budge, *Greenfield*, pls. 5–7. Pls. 5 & 6 have been interchanged and misnumbered. Further references are to the numbers actually printed.

[106] Budge, *Ani*, pls. 20, 21; *BD* 39 ff.

[107] *a*: Helck, W., *Urk.* IV, 1847; Hayes, W. C., *Scepter of Egypt*, II (Cambridge, Mass., 1959), 270 f. *f*: Helck, *op. cit.* 1819.

[108] For late parallels see Lefebvre, E., *Traduction comparée des hymnes au soleil composant le XV^e^ chapitre du rituel funéraire égyptien* (Paris, 1868); Allen, *BD* 79 ff.

MORNING HYMNS

I

	Source[109]	*Date*	*Publication*
(A)	Papyrus (Leyden T.2)	Late 18th–19th Dyn.	Leemans, *Aeg. Mon.* III, T.2, pls. 1, 2. Naville, *Todtb.* I, 15A1. Budge, *BD* 5 f.
(B)	Theban tomb 2(3), courtyard stela	Ramesses II	Bruyère, *Tombes théb.* 55.
(C)	Papyrus (B.M. 10541, cols. 25 ff.), Thebes	21st Dyn.	Shorter, *Catalogue of Egyptian Religious Papyri* (London, B.M., 1938), 62, 72.
(D)	Papyrus (B.M. 10554), Thebes	21st Dyn.	Budge, *Greenfield*, 23 f., pl. 29.
(E)	Papyrus (B.M. 10793, sh. 12), Thebes	21st Dyn.	Unpublished.
(F)	Stela, Giza	21st Dyn. (?)	Selim Hassan, *Excavations at Giza*, VIII (Cairo, 1953), 270 f. (lines 23–43), pl. 68B.
(G)	Papyrus (B.M. 10474), Thebes	21st–22nd Dyn.	Budge, *Facsimiles of Egyptian Hieratic Papyri*, 1st Series (London, B.M., 1910), pl. 33; 2nd Series (1923), 18 f. (transl.).
(H)†	Papyrus (Berlin 3055), Thebes	22nd Dyn.	*Hieratische Papyrus aus den königl. Museen zu Berlin, I: Ritual für den Kultus des Amon* (Berlin, 1896), pls. 19 f. Moret, *Le rituel du culte divin journalier en Égypte* 135 ff.

rs.k nfr,(1) *'Imn-Rᶜ-Ḥrꜣḫty-'Itm-Ḫprỉ,*(2) *Ḥr ḏꜣ pt,*(3) *bỉk ᶜꜣ sḥb šnbt, nfr ḥr m šwty wr(ty). rs.k nfr ḥr tp dwꜣyt m ḏd n.k Psḏt tm.tỉ, hy-hnw n.k m mšrw. swꜣš tw knmtyw, sḏr ỉwr ḥḏ tꜣ*(4) *r mswt.k. ḫnm tw mwt.k rᶜ nb. ᶜnḫ Rᶜ, mwt Nỉk. ỉw.k mn.tỉ, rḳy.k*(5) *ḫr. ḏꜣ.k ḥrt m ᶜnḫ wꜣs, sḥb.k pt*(6) *m mᶜnḏt, wrš.k*(7) *m wỉꜣ.k,*

[109] Numerals in brackets after Theban tomb numbers refer to the plan positions of the inscriptions in Porter & Moss, *op. cit.* I, pt. 1.

ỉb.k nḏm, ỉw Mɜ't[8] *ḥ'.tỉ r ḥɜt.k. wbn R', psd m ɜḫty, Knmty*[9] *ḥɜy ḫprw. ỉswt R' m ỉhy,*[10] *pt tɜ m ršrš, Psḏt 'ɜt (ḥr) ỉr(t) n.k hnw,*[11] *'Imn-R'-Ḥrɜḫty pr(w) m mɜ'-ḫrw.*[12] *sp* 4.

Awake happily, Amen-Re-Harakhti-Atum-Khepri, Horus who crossest the sky, great falcon, festal of breast, gracious of face with the great double plumes. Awake happily in the morning, say all the Ennead to thee; jubilation to thee in the evening. The stars extol thee. She who is pregnant (i.e. Nut) goes to rest at dawn at thy birth. Thy mother nurses thee every day. Re lives and the serpent-demon dies. Thou abidest and thine enemy is overthrown. Thou crossest the sky in life and dominion, making the sky festal in the day-boat. Thou spendest the day in thy barque, thy heart glad, while Maat appears before thee. Re rises, shining in the horizon, Kenemty, bright of form. The crew of Re are jubilant, heaven and earth are joyful, the Great Ennead makes acclamation for thee, Amen-Re-Harakhti having gone forth triumphant. (To be recited) four times.

NOTES

All sources represent the complete text except A and B, which end at *ḥɜt.k* and *rḳy.k ḫr* respectively. As published in type, F shows several variations, but the inscription is so abraded that these must be very doubtful.

1. According to G,H. Others have *ỉnḏ ḥr.k*, 'Hail to thee'.
2. Selection and order vary. A,D,E,F omit Amun.
3. A omits *ḏɜ pt*.
4. A,C substitute *rs tp*, 'vigilant', and B,F *nhs*, 'wakeful' for *ḥḏ tɜ*.
5. C,F(?),G have *ḫfty.k*, 'thine enemy'.
6. A has *Nḥb-kɜ(w)*, 'Nehebkau', for *sḥb.k pt*. On this deity see Shorter in *JEA* 21 (1935), 41 ff.
7. A *ršỉ*, 'rejoicest', om. *m*.
8. A *ỉ'rt*, 'uraeus'.
9. A star god (*Wb*. V, 133). H, possibly erroneous, has *knḥrty*.
10. C,D,F *hy-hnw* with the same meaning.
11. C–F om. *Psḏt . . . hnw*.
12. F has *R' pr(w) m mɜ'-ḫrw* written out four times, thus presumably indicating the extent of the passage to be repeated, although still including this direction. The significance of the repetition may have lain in the practice of addressing rites and formulae to the four points of the compass. See Schott, S., 'Zweimal als Ausrufungszeichen' in *ZÄS* 79 (1954), 59.

II

	Source	*Date*	*Publication*
(A)	Fragments of stela or altar (Chicago OIM 1365), Thebes	Amenophis II	Petrie, *Six Temples at Thebes* (London 1897), 20, pl. 1(4). Allen, *BD* 86, pl. 102A.
(B)	Theban tomb 52, statuette	Tuthmosis IV (?)	Davies, *Tomb of Nakht* (New York, 1917), 36 ff., pl. 28. Helck, *Urk.* IV, 1603.
(C)	Theban tomb 48(8), doorway, left thickness	Amenophis III	Säve-Söderbergh, *Private Tombs at Thebes*, I: *Four Eighteenth Dyn. Tombs* (Oxford, 1957), 46 f., pl. 52.
(D)	Pyramidion (Leyden K.1), Saqqara	Amenophis III	Leemans, *Aeg. Mon.* III, K.1, pls. 1a, 2d. Boeser, *Beschr.* V, 1 (sides 3, 2).
(E)	Theban tomb 181(1), doorway, left thickness	Amenophis III–IV	Davis, *Tomb of Two Sculptors* (New York, 1927), 27.
(F)	Statuette (Turin 3038)	Pre-Amarna	Maspero in *Rec. trav.* 2 (1880), 163, n.1.
(G)	Theban tomb 55(2), doorway, left thickness	Amenophis IV	Davies, *Tomb of the Vizier Ramose* (London, 1941), 37, pl. 4.
(H)	Stela, Thebes(?)	Akhenaten	Bissing in *ZÄS* 64 (1929), 113 ff., Taf. 4. Sandman, *Texts from the time of Akhenaten* (Brussels, 1938), 144.
(I)	Door jamb (Louvre C.66)	18th Dyn.	Pierret, *Recueil des Inscr. . . . Louvre*, pt. 2 (Paris, 1878), 9.
(J)	Statuette, Thebes	18th Dyn.	Northampton etc. *Theban Necropolis*, 18, pl. 17(2).
(K)	Papyrus (Leyden T.2)	Late 18th–19th Dyn.	Leemans, *Aeg. Mon.* III, T.2, pl. 2. Naville, *Todtb.* I, 15A1. Budge, *BD* 3 f.

(L)	Theban tomb 41(3), stela	Ramesses I–Sethi I(?)	Metropolitan Museum of Art, New York, photo. T.1878.
(M)	Papyrus (B.M. 9901, sh. 1, cols. 1–5, 10 f.), Thebes	Sethi I	Naville, *Todtb.* I, 15A3. Budge, *Hunefer*, pl. 1; *BD* 8 f.
(N)	Papyrus (B.M. 10471, sh.21, cols. 17–19, 27–32), Thebes	19th Dyn.	Budge, *BD* 11 ff.
(O)	Papyrus (B.M. 10470, shs. 18–19, cols. 6–11), Thebes	19th Dyn.	Budge, *Ani*, I, pl. 19; *BD* 36.
(P)	Statuette (B.M. 1305)	19th Dyn.	Unpublished.
(Q)	Statuette (Copenhagen) AEIN 655)	19th Dyn.	Koefoed-Petersen, *Cat. des Statues* (Copenhagen,1950), pl. 64; *Recueil des Inscr.* (Brussels, 1936), 4.
(R)	Stela (Berlin 12748)	N.K.	*Aeg. Inschr.* II, 215.
(S)	Wall fragment (Berlin 9579), Thebes	N.K.	*Ibid.*, 208. Morenz, S. in Firchow, O., *Ägyptologische Studien* (Berlin, 1955), 242 f., Abb. 3.
(T)	Statuette (Berlin 2312)	N.K.	*Aeg. Inschr.* II, 51. Scharff, *Sonnenlieder*, 76, Abb. 8.
(U)	Statuette, Thebes	N.K.	Hilton Price, *Cat. of Eg. Antiq.*, I (London, 1897), 219 f., also in *Transactions Soc. Bib. Arch.* 9 (1893), 343 f.
(V)	Theban tomb 211, ceiling	19th Dyn.	Bruyère, *Tombes théb.*, 81, pl. 21.
(W)	Theban tomb 359, stela (formerly Chicago OIM 403)	Ramesses III–IV	Bruyère, *Deir el-Médineh*, 1945–7, 78 f., fig. 59.

ỉnḏ ḥr.k, Rʿ m wbn.k, 'Itm m ḥtp.k nfr. ḥʿ.k, psd.k ḥr psd mwt.k,(1) *ḥʿ.tỉ m nsw Psḏt. ỉry Nwt nyny n ḥr.k, ḥpt tw Mɜʿt*(2) *r trwy. nmỉ.k ḥrt, ỉb.k ɜw, mr Dswy*(3) *ḥpr m ḥtpw, sbỉ ḫr, "wy.fy ḳsw; ḥsḳ.n dmwt ṯswt.f.*

wnn Rʿ m mɜʿw nfr.(4) *msktt sk.n.s pḥ sy. stɜ tw rsyw, mḥtyw, ỉmntyw, ỉɜbtyw ḥr dwɜ.k, pɜwty, ḫpr ḏs.f, ỉty ḥḳɜ ḳmɜ.n.f, pr m Nnw bɜkw m ḫprw, wd mdw, tɜ bʿḥ.tỉ m sgr, wʿ ḫpr ỉmytw pt tɜ, nn ḫpr sɜtw Dɜt.*

Hail, O Re, when thou risest, Atum, when thou settest beautifully. When thou appearest, thou shinest upon the back of thy mother, thou having appeared as king of the Ennead. Nut does homage to thy face, and Maat embraces thee at all times. Thou travellest the sky, thy heart glad, the Sea of Deswy having become at peace, the rebel overthrown, his arms bound; knives have severed his vertebrae.

Re is with a fair breeze. The night-barque has destroyed him who attacked it. The southerners, the northerners, the westerners, and the easterners tow thee, adoring thee, the primeval one, who came into existence by himself, the sovereign who rules what he created, who went forth from the abyss endowed with a form, who commands, and the earth is filled with silence, the unique one, who came into existence between heaven and earth, before the earth and the netherworld had come into being.

NOTES

Only two sources above (D,O) contain the whole text, but these are sufficiently separated in time (Amenophis III and the Nineteenth Dynasty) and in place (Saqqara and Thebes) to show that it was entirely traditional. More usually the hymn is quoted as far as *pḥ sy* in the second paragraph (A,F,H,I,K,U), but many copies, particularly on small monuments, are confined to the first paragraph in various degrees of completeness (B,C,E,J,P–T,V,W).

Of the early versions, previously discussed in *JEA* 46, 85 ff., the most interesting is H, probably from Thebes, and dating to the reign of Akhenaten. Presumably in order to conform to the Atenist doctrine the text has been modified, although somewhat superficially, so as to eliminate references to other deities.

1. In I,K,L,M the punning phrase *ḫ'.k* (or *wbn.k*) *psd.k ḥr psd mwt.k* is simplified to *wbn.k*, *sp sn* ('twice'), *psd.k*, *sp sn*, 'Thou risest, thou risest, thou shinest, thou shinest', or something similar. On such repetitions see Schott, *op. cit* 54 ff.
2. L,S substitute *sn* (or *snsn*) *tw ỉswt.k*, 'thy crew greets thee', and V,W *sn tȝ ỉswt.k*, 'thy crew does obeisance'.
3. Lit. 'the Two Knives'. Written with the dual ending in A, but elsewhere simply with two 'knife' ideograms, and often transliterated as *Dsds*. The name may have been derived by pun from *Dsds* or *Ḏsḏs*, the Oasis of Bahariyah (earlier written without the knives, the latter therefore merely phonetic), which lies to the west of Hermopolis, and would reasonably have featured in the local solar mythology. There the mythical sea was a symbol of the primeval water, and appears to have been represented by the temple lake (see Sethe, *Amun*, 79 f.; Roeder, G., *Hermopolis* (Hildesheim, 1959), 36 f.).

I,R, also Var. 1,B,C, below confuse with the Island of Flames (*iw nsrsr*), the sun's birthplace, which was said to be in the middle of the lake (see Bonnet, *op. cit.* 194). P has the variant *mr nḫ*ꜣ (?) on which see Addendum, p. 74.

4. *m r-*ꜥ, 'also' is subst. for *nfr* in F,H,U,

Besides limited variations of this kind the following more extended forms, although themselves fluctuating somewhat, are distinct enough to warrant separate classification.

II, variant 1

	Source	*Date*	*Publication*
(A)	Statuette (Chicago OIM 9380), Thebes(?)	18th Dyn.	Daressy in *Rec. trav.* 17 (1895), 114. Allen, *BD* 86, pl. 101.
(B)	Stela	19th Dyn (?)	Černý, J., *Egyptian Stelae in the Bankes Collection* (Oxford, 1958). no. 1
(C)	Stela (Marseilles 239)	Late N.K.	Maspero in *Rec. trav.* 13 (1890), 122 f.

In this version the latter part of the first paragraph reads:

ỉr Mꜣꜥt nyny n ḥr.k, snsy tw ỉswt.k r trwy.(1) *nmỉ.k ḥrt, ỉb.k ꜣw, mr Dswy bꜥḥ m ršwt,*(2) *ḫfty.k ḫr, ḥsḳ tp.f.*(3) *nỉk pf sỉp n sḏt,*(4) *ḫꜣt.f m tm*(5).

Maat does homage to thy face, and thy crew worship thee at all times. Thou travellest the sky, thy heart glad, and the Sea of Deswy having been inundated with joy, for thine enemy has been overthrown and his head cut off. That serpent-demon has been consigned to the flame, and his corpse destroyed.

NOTES

1. B has *sn tꜣ* for *snsy tw* and *tr*, 'worship', for *trwy*.
2. B, C have the more usual *ḫpr m ḥtpw* for the last three words.
3. B, C have *nn wnn.sn* (with plural *ḫftyw*), 'they shall exist no more'.
4. For this phrase see also Budge, *BD* 13; Stewart in *JEA* 46, 89, fig. 2, col. 8.
5. B, C have Atum.

II , variant 2

	Source	*Date*	*Publication*
(A)	Papyrus (B.M. 10470, sh. 1, cols. 1–4), Thebes	19th Dyn.	Budge, *Ani*, I, pl. 1; *BD* 1.
(B)	Pillar (Leyden K.9)	19th Dyn.(?)	Leemans, *Aeg. Mon.* III, K. 9, pl. 16(9e). Boeser, *Beschr.* IV, pl. 36(5d).

ỉnḏ ḥr.k, ỉỉ.tỉ m Ḫprỉ, ḫpr(?) *m ḳmɜ nṯrw.*(1) *ḥ‘.k, wbn.k ḥr psḏ mwt.k, ḥ‘.tỉ m nsw nṯrw.*(2) *ỉry n.k mwt.k Nwt, ‘‘wy.s m ỉrt nyny, šsp tw Mɜnw m ḥtp,*(3) *ḫpt tw Mɜ‘t r trwy.*

Hail, thou who art come as Khepri, who came into existence(?) as the creator of the gods. When thou appearest, thou shinest upon the back of thy mother, thou having appeared as king of the gods. Thy mother Nut ministers to thee, her arms in greeting, Manu receives thee in peace, and Maat embraces thee at all times.

NOTES

1. The opening line seems to have been derived from another hymn, no. III* below. Although in both A and B *ḫpr* is written as the god Khepri, duplicating the previous word, the verb form was presumably intended as in III*.
2. B has a long interpolation.
3. B subst. *r ḥtp.k m ɜḫt nt Mɜnw*, ‘until thou goest to rest in the horizon of Manu’ (ending here).

II, variant 3

	Source	*Date*	*Publication*
(A)	Papyrus (B.M. 10470, sh.20, cols. 45 f), Thebes	19th Dyn.	Budge, *Ani*, I, pl. 21; *BD* 44.
(B)	Papyrus (B.M. 10554), Thebes	21st Dyn.	Budge, *Greenfield*, pl. 5.
(C)	Papyrus (Turin 1791)	Ptol.	Lepsius, *Todtb.* 15*f*, cols. 25 f.

This short extract, which occurs in a popular compilation, represented in all three sources, consists of the passage *wnn R‘* to *pḥ sy* with the continuation: *ỉswt R‘ m ḥ‘‘wy, nbt ‘nḫ ỉb.s nḏm, sḫr ḫftyw n nb.s*, ‘the crew of Re are in rejoicing, and the lady of life [i.e. Nut] is glad, for the enemies of her lord have been overthrown.’

III

	Source	*Date*	*Publication*
(A)	Rock stela, Arminna	First half 18th Dyn.	Simpson, W. K., *Hekanefer* (Newhaven & Philadelphia, 1963), 33, fig. 26.
(B)	Pyramidion (Leyden K.1), Saqqara	Amenophis III	Leemans, *Aeg. Mon.* III, K.1, pls. 2c, 1b. Boeser, *Beschr.* V, 1 (sides 1, 4).

(C)	Stela, Saqqara	Amenophis III(?)	Quibell, J. E. & Hayter, A. G. K., *Excavations at Saqqara: Teti Pyramid, North Side* (Cairo, 1927), 32 f., pl. 9.
(D)	Stela (B.M. 551), Saqqara	Tutankhamun	Edwards, I. E. S., *Hierogl. Texts*, VIII (London, B.M., 1939), 31 ff., pl. 28. Helck, *Urk.* IV, 2095 ff.
(E)	Papyrus (B.M. 10471, sh. 21), Thebes	Early 19th Dyn.	Budge, *BD* 11; *Osiris* (London, 1911), I, frontispiece.

inḏ ḥr.k, ꜣḫ.tỉ spd.tỉ, 'Itm-Ḥrꜣḫty. ỉw.k ḥ'.tỉ m ꜣḫt nt pt, ỉꜣw n.k m r ḥr nb, nfr.tỉ rnp.tỉ m ỉtn m-ḫnw ''wy mwt.k Ḥwt-Ḥr.(1) *ḥ' ỉr.k m st*(2) *nbt, ỉb.k ꜣw n ḏt. ỉw n.k ỉtrty m ksw, dỉ.sn ỉꜣw n wbn.k.*(3) *ḥ'.wy tw m ꜣḫt nt pt.*(4) *stt.n.k tꜣwy m mfkꜣt. R' pw Ḥrꜣḫty, ḥwn nṯry, ỉw' n nḥḥ, wtt sw ms sw ḏs.f,*(5) *nsw pt tꜣ, ḥkꜣ Dꜣt, ḥry-tp smyt ỉwgrt, pr m ḥbbt, stꜣ sw m Nnw, rnn sw sḏsr mswt.f,*(6) *nsw nḫt, ḥ' m ꜣḫt. Psḏt m hnw n wbn.k, ỉrt nbt m thḥwt, ḥ'' m ḥ'.k n.sn, nṯr špsy ỉmy kꜣrỉ.f, nb nḥḥ ḥry-tp wỉꜣ.f.*(7) *ḫnỉ tw ỉmyw ꜣḫt, skḏ*(8) *tw ỉmyw msktt, snsy tw bꜣw ỉꜣbtt, hnw n.k bꜣw ỉmntt.*(9) *nṯr nfr, psd ỉmꜣw, sš tꜣwy m ḏ'mw.*

Hail, thou who art splendid and watchful, Atum-Harakhti. When thou appearest in the horizon of heaven, hymns to thee are in the mouths of everyone, thou being beautiful and youthful in the sun-disk within the arms of thy mother Hathor. How thou shinest in every place, thy heart rejoicing forever. The two conclaves come to thee bowing, that they may give praise because of thy rising. How thou shinest in the horizon of heaven. Thou hast strewn the Two Lands with turquoise. It is Re-Harakhti, the divine youth, heir of eternity, who begot himself and bore his own self, the king of heaven and earth, ruler of the netherworld, chief of the desert and the necropolis, who went forth from the waters, who dragged himself forth from the abyss, who nursed himself and sanctified his offspring, a mighty king, shining on the horizon. The Ennead are in jubilation at thy rising, everyone is in acclamation, rejoicing when thou appearest to them, the august god, who is in his shrine, lord of eternity, master of his barque. Those who are in the horizon row thee, those who are in the night-barque convey thee, the spirits of the east invoke thee, the spirits of the west acclaim thee. The good god—when his splendour shines, the Two Lands are strewn with fine gold.

NOTES

Although A quotes only the opening as far as *pt*, the extract is distinctive enough to establish the fact of the hymn's existence in the early part of the Eighteenth Dynasty. C and D contain the most complete versions, D continuing unparalleled beyond the point reached above. B, unlike the others, is addressed to the setting sun.

1. B substitutes Isis for Hathor, and omits the next two sentences.
2. D erroneously omits *m st*, which should be supplied in the publications quoted.
3. For this sentence see also Edwards, *op. cit.* pl. 27, and with varied ending no. V* below. C subst. *dwꜣ.sn nfrw ḥm.k*, 'that they may adore the beauty of thy Majesty', for the latter phrase. On the two conclaves (deities of Upper and Lower Egypt) see Gardiner in *JEA* 30 (1944), 27.
4. C inserts *bꜣ n pt, ḫꜥt n Dꜣt*, 'thou whose soul belongs to the sky, and body to the netherworld' and resumes at *ḥwn nṯry*.
5. The passage from *ḥwn* occurs also in Edwards, *op. cit.* pl. 27.
6. C has *rnn sw Psḏt m ḫ'.f*, 'the Ennead nurse him when he appears'.
7. C replaces *nṯr špsy*, etc. by *Psḏt* m *hy-hnw n mrwt.k, nṯr nfr*, 'The Ennead are in jubilation through love of thee, the good god'.
8. C has *skꜣ*, 'extol'.
9. The passage *ḫnỉ . . . ỉmntt* (only in C,D) appears also in no. V* (note 3).

IV

	Source	*Date*	*Publication*
(A)	Stela (B.M. 826, lines 1–14)	Amenophis III	Edwards, *op. cit.* 24 ff., pl. 21. Varille in *Bull. Inst. fr.* 41 (1942), 25 ff. Helck, *Urk.* IV, 1943 ff.
(B)	Statue fragment (B.M. 968), Thebes(?)	Amenophis III(?)	Stewart in *JEA* 43 (1957), 3 ff., pl. 2.

Source A contains the well-known hymn of Suty and Hor, mentioned above, the fragmentary parallel B confirming, so far as it goes, the authenticity of the text. A statement in Pritchard, J. B., *Ancient Near Eastern Texts*, 2nd ed. (Princeton, 1955), 367, that a companion stela, Cairo 34051, belonging to the same individuals also bears the hymn is not corroborated by the publication, Lacau, *Stèles du Nouvel Empire* (*CGC*), 90 ff., pl. 30.

This version, of which an English translation is given in Pritchard, *op. cit.* 367 f., consists of two distinct parts, the second beginning at line 8 of source A, and being represented also in B. During the Nineteenth Dynasty a modified and shortened form of the first part appears in a popular compilation made for funerary use. A comparative edition of the latter version follows.

IV, variant

	Source	*Date*	*Publication*
(A)	Papyrus (B.M. 9901, sh. 1, cols. 14 ff.), Thebes	Sethi I	Naville, *Todtb.* I, 15A3. Budge, *Hunefer*, pl. 1; *BD* 9 f.
(B)	Papyrus (B.M. 10470, sh.20, cols. 16 ff.), Thebes	19th Dyn.	Budge, *Ani*, I, pl. 20; *BD* 41 f.
(C)	Stela (Vatican 251)	19th Dyn.	Marucchi, O., *Museo egizio vaticano* (Rome, 1899), 120 ff. Botti, G. & Romanelli, P., *Le Sculture del Museo Gregoriano egizio* (Vatican City, 1951), 77, pl. 60 (no. 124).
(D)	Stela (Cairo), Saqqara	19th–20th Dyn.	Piehl in *Rec. trav.* 2 (1880), 71 ff.
(E)	Papyrus (B.M. 10554), Thebes	21st Dyn.	Budge, *Greenfield*, pl. 6.
(F)	Papyrus (Turin 1791)	Ptol.	Lepsius, *Todtb.* 15*c*.

ỉnḏ ḥr.k, wbn.k m ꜣḫt.k m Rꜥ, ḥtp ḥr mꜣꜥt. ḏꜣ.k pt, ḥr nb ḥr mꜣꜣ.k.(1) *šm.k, ỉmn tw*(2) *m ḥr.sn. dỉ.k tw dwꜣw m ḫrt-ḥrw.*(3) *rwḏ sḳdd ḫr ḥm.k. stwt.k m ḥr nn rḫ st. ḏꜥmw nn sy mỉ ỉmꜣw.k. tꜣw nw nṯrw, mꜣꜣ.n.tw ḥr sšw, ḫꜣswt nt Pwnt r sỉp tw, ỉmnw.*(4) *ỉr.n.k tw wꜥ.tỉ m wn r.f, ḫprw.k tp Nnw. ỉw.ỉ šm.ỉ m mỉtt šm.k nn ỉr.f ꜣbw mỉ ḥm.k. hrw ktt ḫpt wꜣt ỉtrw m ḫḥw ḫfnw. ꜣt šrỉt ỉr.n.k st. ḥtp.n.k, km.n.k wnwt grḥ m mỉtt. gsgs.n.k st km.n.k mỉ nt-ꜥ.k. ḥḏ tꜣ dỉ.k tw r-ꜥ.k m Rꜥ, wbn.k m ꜣḫt.*

Hail to thee, when thou risest in thy horizon as Re, who takes pleasure in truth. When thou crossest the sky, everyone sees thee. When thou departest, thou art hidden from their sight. Thou presentest thyself early in the daytime. Vigorous is the sailing under thy Majesty. Thy rays are in the face before one knows it. Fine gold is not like thy splendour. The lands of the gods, which one has seen (i.e. about which one has read) in the writings, and the hill-countries of Punt will inspect thee, who wert hidden. Thou madest thyself, being indeed alone, thy form being upon the primeval waters. May I come and go likewise as thou goest, without ceasing, like thy Majesty. In a brief day thou travellest a

course of millions and hundred-thousands of *iters*.[5] In a little moment thou hast accomplished them. When thou hast set, thou hast completed the hours of night likewise. Thou hast regulated them and completed them according to thy wont. At dawn thou takest thy place as Re, when thou risest in the horizon.

NOTES

With the exceptions of A and C most of the sources include the complete text. The many corruptions in F are ignored.

1. This sentence occurs in one of the Aten hymns (Davies, *El Amarna*, IV, pl. 4=Sandman, *op. cit.* 48 f.), but without *mȝȝ*. Both Davies and Sandman, while noting that 'something must have been omitted', seem to have been unaware of the parallel.
2. B–D have *ỉmnw*, 'they are hidden'.
3. E,F add *nt rʿ nb*, 'of every day'. B subst. *mšrw*, 'evening' for *ḫrt*.
4. E,F add *m ḥr.sn*, 'from their sight'.
5. A river-measure. See Gardiner, *Egyptian Grammar*, §266, 2.

V

	Source	*Date*	*Publication*
(A)	Papyrus (Leyden T.2)	18th–19th Dyn.	Leemans, *Aeg. Mon.* III, T.2, pl. 4. Naville, *Todtb.* I, 15A2; II, 15A(*La*). Budge, *BD* 6 f.
(B)	Stela (B.M. 332)	18th–19th Dyn.	Hall, *Hierogl. Texts*, VII (London, B.M., 1925), pl. 39.
(C)	Theban tomb 2 (4), outer doorway, right thickness	Ramesses II	Černý, *Répertoire onomastique de Deir el-Médineh* (Cairo, 1949), 11.
(D)	Theban tomb 2 (15), inner doorway, left thickness	Ramesses II	Bruyère, *Tombes théb.* 48.
(E)	Theban tomb 329, fragment	19th Dyn.	Bruyère, *Deir el-Médineh*, 1926, 81 f., fig. 57.
(F)	Theban tomb 335(19), passage	19th Dyn.	Bruyère, *ibid.*, 1924–5, 150; *Tombes théb.* frontispiece.
(G)	Papyrus (B.M. 9955)	19th Dyn.	Naville, *Todtb.* II, 15A(*At*).
(H)	Statuette (Cairo 625), Thebes	19th Dyn.	Borchardt, *op. cit.* II, 171 f., pl. 114.

(I)	Statuette, dyad (Louvre A63)	19th Dyn.	Pierret, *op. cit.* pt. 2, 32 f. Piehl, *Inscr. hiéro.* 1 Série, pl. 13(C). Vandier, *Manuel d'archéol. ég.* III: La statuaire (Paris, 1958), pl. 160(5).
(J)	Theban tomb 1 (5), ceiling	19th Dyn.	Toda, E., *Son Notem em Tebas* (Madrid, 1887), 35. Bruyère, *La tombe no.* 1 *de Sen-nedjem* (Cairo, 1959), 55, pl. 18.
(K)	Theban tomb 1, stela	19th Dyn.	Bruyère, *ibid.* 19, pl. 12.
(L)	Theban tomb 65, ceiling	Ramesses IX	Piehl, *op. cit.* pl. 140(T).

ỉnḏ ḥr.k, wbn m Nnw, sḥḏ tɜwy m-ḫt pr.f. ḥknw tw Psḏt tm.tỉ. rnn tw Nbty Mrty,(1) *ḥwn nfr n mrwt.*(2) *wbn.f ʿnḫ rḫyt.*(3) *ḥ‘‘ Psḏt m mɜɜ.k.*(4) *snsy n.k ỉnhtt; dwɜ n.k ʿwt nbt.*(5)

sbỉt.k ḥr sḫr ḫftyw.k. ḥ‘.k ḥr wỉɜ.k, ỉswt.k m ḥtp. ḫnm.n tw mʿnḏt, ỉb.k ɜw, nb nṯrw, ḳmɜ.n.k. dỉ.sn n.k ỉɜw. Nwt ḫsbd.tỉ ḥr gs.k, ỉbḫ n.k Nnw m stwt.f.(6)

Hail, thou who risest from the primeval waters and illuminest the Two Lands at his (*sic*) going forth. The entire Ennead praises thee. The Two Ladies and the Two Chantresses nurse thee, fair, beloved youth. When he shines the people live. The Ennead rejoices at seeing thee. The apes worship thee; all flocks adore thee.

Thy uraeus overthrows thine enemies. Thou rejoicest in thy barque, and thy crew are contented. The day-boat has protected thee, and thy heart is glad, O lord of the gods, whom thou createdst. They give thee praise. Nut, the azure one, is at thy side, and Nun rejoices for thee because of his (*sic*) sun-rays.

NOTES

A,B,G,H have the most complete texts. C–F, I–K reproduce to varying extents the first paragraph only, K having no more than the opening sentence. L continues to the end of the hymn, but with many omissions.

For a morning hymn the position of C on the right thickness of the doorway would be unusual. The fact that the accompanying figure faces inwards, however, suggests that the hymn may have been adapted for use to the setting sun, cf. III(B), V(C), VI(C). The text is too fragmentary for this to be verified.

1. E.F omit *Mrty*. I substitutes *mwt.k Nwt*, 'thy mother Nut', for the last two words. The Two Ladies (*Nbty*) are Nekhbet and Wadjet, tutelary goddesses of Upper and Lower Egypt respectively. On the Two Chantresses (*Mrty*) see Bonnet, *Reallex.* 457; Derchain in *Chronique d'Égypte* 37 (1962), 264 f.

2. D subst. *ḫsbt*, 'lapis-lazuli', associated below with Nut.
3. B,E,F,H,L omit from *wbn.f*.
4. A has an extended paraphrase of this sentence.
5. A subst. *dwꜣ sw ỉnhtt, ỉꜣw n.k 'wt nbt m bw w'*, 'The apes adore him; all flocks together give praise to thee (*sic*)'.
6. A,G,H,L conclude with the prayer: 'Mayst thou shine (*sḫḏ.k*) for me, that I may see thy beauty, etc.'

VI

	Source	*Date*	*Publication*
(A)	Papyrus (B.M. 10470, sh. 20, cols. 7–12), Thebes	19th Dyn.	Budge, *Ani*, I, pl. 20; *BD* 40 f.
(B)	Stela (Vatican 251)	19th Dyn.	Marucchi, *op. cit.* 120 ff. Botti & Romanelli, *op. cit.* 77, pl. 60 (no. 124).
(C)	Theban tomb 158 (8), south end of hall	19th Dyn.	Seele, K. C., *Tomb of Tjanefer* (Chicago, 1959), pl. 25A.
(D)	Stela (Berlin 7270), Saqqara	N.K.	*Aeg. Inschr.* II, 193.
(E)	Coffin (OIM 7196), Abydos	20th Dyn.(?)	Petrie, *Abydos*, I (London, 1902), 35, 48, pl. 71. Allen, *BD* 79 f., pl. 97.
(F)	Papyrus (B.M. 10554), Thebes	21st Dyn.	Budge, *Greenfield*, pl. 6.
(G)	Papyrus (Turin 1791)	Ptol.	Lepsius, *Todtb.* 15*b*.

ỉnḏ ḥr.k, Rʿ-Ḥrꜣḫty, Ḫprỉ pw, ḫpr ḏs.f. nfr.wy wbn.k(1) *m ꜣḫt.*(2) *sḫḏ.k tꜣwy*(3) *m stwt.k. nṯrw nbw m ḥʿ"wt, mꜣꜣ.sn tw m nsw n pt, nbt*(4) *wnwt mn.tỉ m tp.k, šmʿ-s mḥ-s m wpt.k, ỉw ỉr.n.s st.s m-ḫꜣt.k. Ḏḥwty mn m ḫꜣt wlꜣ.k ḥr sswn*(5) *ḫftyw.k nbw. ỉmyw Dꜣt prw m ḫsfw.k r mꜣꜣ sšm pw nfr.*

Hail, Re-Harakhti, Khepri who came into existence by himself. How beautifully thou shinest in the horizon. Thou illuminest the Two Lands with thy rays. All the gods rejoice, when they see thee as king of heaven, the lady of the uraeus (i.e. the goddess Wadjet) being established on thy brow, and the crowns of Upper and Lower Egypt on thy head, they having taken their place at thy front. Thoth is stationed on the prow of thy barque, destroying all thine enemies. Those who are in the nether-world are come forth at thy approach to see this beautiful image.

NOTES

While the hymn stands independently in D, elsewhere it is evidently regarded as part of Lepsius's ch. 15, of which A includes sections *a–f*, and the other sources varying amounts.

C has been adapted for use as an evening hymn with the alteration at 1–3:

1. *ḥtp.k*, 'thou settest', replaces *wbn.k*.
2. *ỉmntt nt pt*, 'west of heaven', is added.
3. *tꜣwy* is changed to *Dꜣt*, 'netherworld'.
4. An additional copy of late 18th–19th Dynasty date on a stela (Brooklyn 37.46E) from Saqqara, to be published by T. G. H. James, has *nbt* written with the cobra determinative, thus removing the possibility of its being the adjective 'all' qualifying 'heaven', as it is sometimes translated. This source kindly pointed out by the author.
5. A has *sswnd* (*sic*).

VII

	Source	*Date*	*Publication*
(A)	Pyramidion (Berlin 13456)	19th Dyn. (?)	*Aeg. Inschr.* II, 400.
(B)	Pillar (Leyden K.9)	19th Dyn. (?)	Leemans, *Aeg. Mon.* III, K.9, pl. 16(9c). Boeser, *Beschr.* IV, pl. 36 (5e).
(C)	Papyrus (B.M. 10470), Thebes	19th Dyn.	Budge, *Ani*, I, pl. 19; *BD* 35f.
(D)	Papyrus (B.M. 10554), Thebes	21st Dyn.	Budge, *Greenfield*, 23 f., pl. 29.
(E)	Papyrus (B.M. 10793, sh. 12), Thebes	21st Dyn.	Unpublished.

ỉnḏ ḥr.k, Rᶜ m wbn.k, 'Itm-Ḥrꜣḫty. dwꜣ.ỉ tw, nfrw.k m ỉrty.ỉ ḫpr ꜣḫw.k ḥr šnbt.ỉ.(1) *ḏꜣ.k ḥtp.k m msktt, ỉb.k ꜣw m mᶜnḏt.*(2) *nmỉ.k ḫrt m ḥtp, sḫr ḥftyw.k nbw. hnw n.k ỉḫmw-wrd, dwꜣ tw ỉḫmw-skk,*(3) *ḥtp m ꜣḫt nt Mꜣnw, nfr.tỉ m Rᶜ rᶜ nb, ᶜnḫ.tỉ ḏd.tỉ m nb.ỉ.*

Hail, O Re, at thy rising, Atum-Harakhti. I worship thee, thy beauty being in mine eyes, when thy sunlight comes into being over my breast. Thou crossest (the sky) and goest to rest in the night-barque, thy heart having been glad in the day-barque. Thou traversest heaven in peace, all thine enemies having been overthrown. The 'unwearying' stars acclaim thee, the 'imperishable' stars worship thee, who settest in the horizon of Manu, being beautiful as Re every day, living and enduring as my lord.

NOTES

1. The section *dwꜣ.ỉ . . . šnbt.ỉ*, which introduces a personal note, is omitted in source A. Since it appears in other contexts (e.g. after no. III, B,D), there is some doubt about its authenticity here.
2. C has a corruption of this phrase.
3. On these star-groups see p. 38. After this point A and B diverge from the standard text.

VIII

	Source	*Date*	*Publication*
(A)	Theban tomb 38(1), doorway, left thickness	Tuthmosis IV	Kuentz in *Bull. Inst. fr.* 21 (1922), 120.
			Scheil in *Mém. Mission arch. fr.* V, fasc. 4 (Paris, 1894), 572.
			Davies, *Private Tombs at Thebes*, IV: *Scenes from some Theban Tombs* (Oxford, 1963), 7 f., pl. 7B.
(B)	Statuette (Cairo 977)	N.K.	Borchardt, *op. cit.* IV, 12 f., pl. 159.

ỉnḏ ḥr.k, Rʿ-Ḫprỉ-ʾImn-Ḥrꜣḫty. ỉỉ.n.ỉ ḫr.k dwꜣ.ỉ nfrw.k wbn.k m ỉꜣbtt pt, swꜣš.ỉ tw ḥtp.k m ʿnḫ. šsp.ỉ tw ḫft dꜣtyw.(1) *ʿʿwy.ỉ ḫr wḏꜣt, ḥnk.ỉ Mꜣʿt. dỉ.ỉ ḥtp ḥmt*(2) *(m) ḫrt-hrw nt rʿ nb, ỉw rdỉw N. m msktt mʿnḏt ḏt ḏt.*

Hail to thee, Re-Khepri-Amun-Harakhti. I have come to thee that I may praise thy beauty when thou appearest in the east of heaven, and extol thee when thou settest in life. I welcome thee in the presence of the dwellers in the netherworld. My hands bring the udjat-eye, and I present Maat. I propitiate the neshmet-barque in the course of every day, while N. is placed in the night-barque and the day-barque for ever and ever.

NOTES

1. B omits *swꜣš.ỉ . . . dꜣtyw.*
2. For *ḥmt*=neshmet-barque (of Osiris) see *Wb.* III, 93.
   B adds *msktt*, and continues differently with *ḏꜣ*[*.k*] *ḥrt m ꜣw*(*t*)*-ỉb, ḫft*[*yw.k ḫr*], 'Thou crossest the sky in gladness, thine enemies having been overthrown.'

IX

	Source	*Date*	*Publication*
(A)	Papyrus (Cairo: Bulaq 17)	Amenophis II(?)	Mariette, *Les papyrus . . . Boulaq*, II, pl. 11.
(B)	Stela	Ramesses II	Černý, *Eg. Stelae in the Bankes Collection*, no. 4.
(C)	Papyrus (B.M. 9988)	19th–20th Dyn.	Shorter, *op. cit.* 58, 66.

dwꜣ ʾImn-Rʿ, kꜣ ḥry-ỉb ʾIwnw, ḥry-tp nṯrw nbw, nṯr nfr mry.tỉ, rdỉ ʿnḫ n srf nb n mnmnt nbt nfrt.[1]

ỉnḏ ḥr.k, ʾImn-Rʿ, nb nswt tꜣwy, ḥnty ʾIpt-swt, kꜣ mwt.f, ḥnty sḫwt.f, pd nmtwt, ḥnty tꜣ šmꜥ, nb Mḏꜣw, ḥḳꜣ Pwnt,[2] *wr n pt, smsw n tꜣ, nb ntt, mn*[3] *ḫt nbt.*

Adoration of Amen-Re, bull who is in the midst of Heliopolis, chief of all the gods, the good god, the well-beloved, who gives life to all that are warm and to all good cattle.

Hail, Amen-Re, lord of the thrones of the Two Lands, pre-eminent in Karnak, bull of his mother, master of his fields, far-striding, pre-eminent in Upper Egypt, lord of the Medjay, ruler of Punt, eldest of heaven, first-born of earth, lord of what exists, enduring of all things.

NOTES

1. The title, included here because of its distinctive character, is unusual in having a large laudative element. C omits *nbt nfrt*.
2. In C the words *Mḏꜣw . . . Pwnt* are interrupted by two personal names belonging to figures depicted worshipping the sun-disk. These names were written first and the hymn inscribed round about them.
3. B has *mn.tỉ m* 'enduring in'.

X

	Source	*Date*	*Publication*
(A)	Papyrus (B.M. 10470, sh. 20, cols. 31–36), Thebes	19th Dyn.	Budge, *Ani*, I, pl. 21; *BD* 43.
(B)	Papyrus (B.M. 10554), Thebes	21st Dyn.	Budge, *Greenfield*, pl. 6.
(C)	Papyrus (Turin 1791)	Ptol.	Lepsius, *Todtb.* 15*e*.

ỉꜣw n.k, wbn m nbw, sḫḏ tꜣwy m ḥrw n mswt.f, ms.n tw mwt.k ḥr ḏrt. sḫḏ.n.k šnn ỉtn, sḫḏ wr, wbn m Nnw, ṯsw m-ʿ hꜣw.f m ḥbbt, sḫb spꜣt, nỉwt nb(t), pryt nb(t), ḫw m nfrw.k. wṯsw kꜣ.k m ḫw ḏfꜣw, ʿꜣ nrw, s sḫm sḫmw, ḥrw st.f r ỉsftyw, ʿꜣ ḫʿw m msktt, wr fꜣw m mʿnḫt.

Praise to thee, who shinest as gold and illuminest the Two Lands on the day of his (*sic*) birth, when thy mother bears thee on (her) hand. Thou hast lightened what the sun encircles, O great luminary, who shinest from the deep, who wast raised up together with his kindred from the flood, who makest festive the nomes, every town, and every house, which are protected through thy goodness. Thy spirit is extolled by means of food and offerings, O thou who art great of dread, mightiest of the mighty, whose throne is protected against evil-doers, magnificent of appearance in the night-barque, great of splendour in the day-barque.

NOTE

C has a few unimportant variations.

XI

	Source	*Date*	*Publication*
(A)	Statuette (Berlin 2314), Thebes	18th Dyn.	*Aeg. Inschr.* II, 51. Schäfer & Andrae, *Die Kunst des alten Orient* (Berlin, 1925), pl. 335(2).
(B)	Statuette (Copenhagen 1019)	N.K.	Mogensen, *Inscr. hiéro.* (Copenhagen, 1918), 2, pl. 2.
(C)	Statuette (Cairo 571), Thebes(?)	Late Period (?)	Borchardt, *op. cit.* II, 120 f., pl. 97.

ỉnḏ ḥr.k, Rʿ, m wbn.k, ʾImn, sḫm nṯrw.(1) *wbn.k sḥḏ.n.k tɜwy. ḏɜ.k ḥrt m ḥtp, ỉb.k ɜw m mʿnḫt, m mɜʿw nfr.*(2)

Hail, O Re, at thy rising, Amun, power of the gods. When thou risest thou illuminest the Two Lands. Thou crossest the sky in peace, thy heart being glad in the day-barque, with a fair breeze.

NOTES

All three copies begin with the same title: 'To adore Re at dawn (*tp dwɜyt*), when he rises in the horizon of heaven.'

1. The opening sentence appears with a different sequel on a statuette, *temp.* Amenophis III: Lalouette, C. in *Revue d'Égyptologie*, 15 (1963), 27 f., pl. 2. C omits the last two words, and adds Harakhti after Amun.
2. After 'day-barque' B ends: 'I extol thee when thou settest in life, triumphant as a god.'

XII

	Source	*Date*	*Publication*
(A)	Theban tomb 192 (9), doorway, left thickness	Amenophis IV	Fakhry in *Ann. Serv.* 42 (1943), 504 f.
(B)	Papyrus (Leyden 1, 344, *verso*, II, 9–III, 6)	Ramesside(?)	Leemans, *Aeg. Mon.* II, pls. 115 f. Massy, A., *Le papyrus de Leyde I, 344 revers* (Gand & Paris, 1886), 4 f.

ỉnḏ ḥr.k, w[b]n . . . . . msktt, ꜥ ꜣ [ḫ'w(?)] m m'nḏt.(1) *. . . wbn.f, sḥtp.f . . . m sꜣt.f Mꜣ't*(2) *snsw n ỉmyw-htt. . . . [nbd-]ḳd,ršwt ḫpr m ỉmyw ḫt.f, ỉswt.f m hy-hnw. . . . sḥḏ.f tꜣwy m ꜣḫw ꜣḫt.f.*

Hail, thou who [shinest] . . . . . the night-barque, magnificent [of appearance(?)] in the day-barque. . . . . When he rises, he is gratified(?) . . . by means of his daughter Maat and the worship of the apes. [His uraeus overthrows(?)] the serpent-rebel, joy occurring among his followers, and his crew being in jubilation. . . . when he illumines the Two Lands with the beams of his eye.

NOTES

The correspondence of these two texts, both badly damaged, is noted by Zandee in *Jaarbericht Ex Oriente Lux*, 16 (1964), 66, where a partial translation of B is given. Since a new publication of A by the Oriental Institute, Chicago, is forthcoming, the version presented above is intended mainly as an aid to the identification of further parallels. It is necessarily based on A, which contains consecutively the passages in common (B being more inflated), and seems to be the more authentic.

1. Cf. no. X, last line.
2. B has 'Maat is gratified'.

XIII

	Source	*Date*	*Publication*
(A)	Statuette (B.M. 29279)	Mid-18th Dyn.	Unpublished.
(B)	Statuette (Berlin 9571)	N.K.	*Aeg. Inschr.* II, 62.

ỉnḏ ḥr.k, nb nswt tꜣwy(1)*, 'Imn, ḥry-tp Psḏt*(2) *ỉr ꜣḫt n ḥr nb, nb 'nḫ, swḏꜣ rḫyt.*

Hail, lord of the thrones of the Two Lands, Amun, chief of the Ennead, who does what is beneficial to all men, the lord of life, who makes the people prosper.

NOTES

1. B substitutes *wbn m ḥrt* (or *pt*), 'thou who shinest in the sky', for *nb nswt tꜣwy*, evidently adapting the hymn to a more particularly solar sense.
2. B has *nṯrw*, 'gods'.

XIV

	Source	*Date*	*Publication*
(A)	Papyrus (B.M. 9901), Thebes	Sethi I	Naville, *Todtb.* I, 15A3. Budge, Hunefer, pl. 1; *BD* 10.
(B)	Pillar (Leyden K.9)	19th Dyn.(?)	Leemans, *Aeg. Mon.* III, K.9, pl. 16 (9c). Boeser, *Beschr.* IV, pl. 36 (5e).

i nb.i, sbby nḥḥ, wnt(y).f(y)[1] *n ḏt, i*[2] *itn pw, nb stwt, wbn.k ʿnḫ ḥr nb.*[3]

O my lord, who travellest eternally, and will exist forever, O disk, lord of sun-rays, when thou shinest, everyone lives.

NOTES

1. B adds *pw*.
2. B omits *i*.
3. B subst. *wbn m ꜣḫt.f*, 'who shines in his horizon', for *wbn.k* etc.

XV

	Source	*Date*	*Publication*
(A)	Stela	First half 18th Dyn.	*Sotheby Sale Catalogue*, Dec. 12th, 1932.
(B)	Statuette (Copenhagen AEIN 655)	Late 18th-19th Dyn.	Koefoed-Petersen, *Cat. des Statues*, pl. 64; *Recueil des Inscr.* 4.

inḏ ḥr.k, ʾImn-Rʿ, ms sw ṯnw wnwt, pr m mwt.f m ḫrt-hrw, ḥtp m-ḫnw.s r nw.f.[1] *ḏi.k ḥrty.k m mꜣʿ-ḫrw, iswt.k ḥʿ.tỉ m-ḫt.k.*

Hail, Amen-Re (the god) who creates himself and distinguishes the hour, who goes forth from his mother during the day, and goes to rest within her in his due time. Thou crossest thy two firmaments in triumph, thy crew being joyful in thy company.

NOTE

1. Cf. the last line of no. II*.

EVENING HYMNS
I*

	Source	*Date*	*Publication*
(A)	Theban tomb 192 (1), vestibule	Amenophis IV	Fakhry in *Ann. Serv.* 42 (1943), 462.
(B)†	Papyrus (B.M. 10689, *recto* VIII, 22–IX, 4), Thebes	Ramesses II	Gardiner, *Hieratic Papyri in the Brit. Mus.*, 3rd Series (London, 1935), I, 91 f.; II, pls. 53 f.
(C)†	Papyrus (Turin, sh. XXI, 3 ff.), Thebes	Ramesses II	Bacchi, E., *Il Rituale di Amenhotpe I* (Turin, 1942), 50 f.
(D)	Theban tomb 177, stela (Turin 1515)	Ramesses II(?)	Maspero in *Rec. trav.* 2 (1880), 167 (no. 311). Piehl, *op. cit.* pls. 82 f. (B).
(E)	Theban tomb 216, pillar	Ramesses II–Sethi II	Bruyère, *Deir el-Médineh*, 1923–4, 53.
(F)	Stela	19th. Dyn. (?)	Černý, *Eg. Stelae in the Bankes Collection*, no. 1.
(G)	Theban tomb 211, ceiling	19th Dyn.	Bruyère, *Tombes théb.* 81, pl. 21.
(H)	Stela, Thebes	N.K.	Bouriant in *Rec. trav.* 7 (1885), 124 f.
(I)	Stela (Marseilles 239), Thebes	Late N.K.	Maspero in *Rec. trav.* 13 (1890), 122 f.
(J)	Theban tomb 359, stela (formerly Chicago OIM 403)	Ramesses III–IV	Bruyère, *Deir el-Médineh*, 1945–7, 78 f., fig. 59.
(K)	Statuette (Cairo 632), Thebes	Late N.K.	Borchardt, *op. cit.* II, 180 ff., pl. 116.
(L)†	Temple, Philae	Ptol.	Bénédite, *Mém. Mission arch. fr.* XIII: *Le temple de Philae* (Paris, 1893–5), 134 f.

ỉnḏ ḥr.k, Rʿ, ḥtp.k m ʿnḫ.(1) *ḫnm.n.k m ꜣḫt nt pt,*(2) *ỉw.k ḫʿ.tỉ m gs ỉmntt m*(3) *ʾItm ỉmy mšrw, ỉỉ.tỉ m sḫm.k. nn rḳy.k, ḥḳꜣ.n.k ḥrt m Rʿ.*(4) *sꜣḥ.k ḥrty*(5) *m nḏm-ỉb, ḫsr.n.k ḥꜣty šnyt. hꜣ.n.k m ḫt mwt.k Nnt,*(6) *ỉt.k Nnw ḥr ỉrt nyny. nṯrw Mꜣnw m*(7) *hnw, ỉmyw Dꜣt m ḥʿʿwt, mꜣꜣ.sn nb.sn, pd nmtwt,*(8) *ʾImn-Rʿ, nb tm.*

Hail, O Re, when thou settest in life. Thou hast joined with the horizon of heaven. Thou hast appeared by the side of the west as Atum in the evening, having come with thy power. Thine enemies do not exist, for thou rulest heaven as Re. Thou reachest thy two firmaments in joy, having dispelled the clouds and the storm. When thou descendest from the body of thy mother Naunet, thy father Nun makes greeting. The gods of the west are in jubilation, and the dwellers in the netherworld rejoice, when they see their lord, far striding, Amen-Re, lord of all.

NOTES

On the liturgical use of this hymn see p. 30. Adaptation to the service of Osiris in source L has involved slight textual changes.

E,F,G,I,J are limited to the first half of the text (to 'as Re'), F,G,I,J proceeding to no. II.

1. The temple sources B,C,L omit the opening, quoted here according to H,K. A,E, both damaged, include a reference to Atum.
2. B,C subst. Amun (Amen-Re) for the pronoun. L opens: '[Osiris, the great god], lord of the horizon, in the western horizon of heaven.'
3. L has *mỉ*, 'like', to suit the ascription to Osiris.
4. L omits the passage from *ḥḳꜣ* presumably for the same reason as above.
5. B,C,L subst. *sḫḏ.n.f tꜣ*, 'He has illumined the land'.
6. A,C have the inverted sky determinative, B,H,L the normal one. Although the names of Nut and Naunet were frequently confused graphically during the New Kingdom (see Schäfer in *ZÄS* 71, 29), this curious reference to the sun-god's birth presumably into the netherworld seems to involve Naunet particularly. If so, it would be a logical counterpart to his morning birth from Nut. A somewhat similar passage in Budge, *BD* 176 may concern the previous stage in the cycle: *ḥ‘ ntrw mꜣꜣ.sn sw m prw nfrw r ḫt Nnt, ms.n sw mwt.f Nwt*, 'The gods rejoice when they see him in his beautiful goings forth to the body of Naunet, after his mother Nut has given birth to him.'
7. B,C replace *m* by *ỉr* (*sic*) *n.f*, 'make for him'.
8. L proceeds to a prayer for the king.

II*

	Source	Date	Publication
(A)	Theban tomb 102(2), facade	Amenophis III	Metropolitan Museum of Art, New York, photo. T.809.
(B)	Theban tomb 48(1), doorway, rt. thickness	Amenophis III	Säve-Söderbergh, *op. cit.* 46, pl. 50B.
(C)	Theban tomb 192(1), vestibule	Amenophis IV	Fakhry in *Ann. Serv.* 42 (1943), 462. Davies in *JEA* 9 (1923), 134, pl. 27(n).
(D)	Stela, Giza	Late 18th–19th Dyn.(?)	Selim Hassan, *Excavations at Giza*, VIII, 239, pl. 62.
(E)	Stela (Moscow 3861)	Late 18th Dyn.(?)	Turaiev, B., *Pamyatniki Muzeya Izyashchnikh Iskusstv... Moskve*, IV (Moscow, 1913), 112, note 1.
(F)	Papyrus (Leyden I, 344, *verso* IV, 1–5)	Ramesside (?)	Leemans, *Aeg. Mon.* II, pl. 117. Massy, A., *Le Papyrus de Leyde I, 344 revers*, 6 f.

inḏ ḥr.k, ḥry-tp nḥḥ, tm wrḏ.(1) *ỉỉ.tỉ m ḥtp. sꜣḥ.n.k tꜣwy, ḫnm.n.k ʿʿwy Mꜣnw.*(2) *šsp.n ḥm.k ỉmꜣḫ, mnỉ.tỉ r r-pr.k n sf. ʿʿwy mwt.k m sꜣ ḥꜣ.k, sbỉt*(3) *ḥr sḫr ḫftyw.k.*

stꜣ tw bꜣw ỉmntt r wꜣt ỉmy(t) tꜣ ḏsr. sḥḏ.k ḥr n ỉryw Dꜣt. sḏm.k nỉs n ntyw m ḏbꜣt. sṯs.k ntyw m dỉ ḥr gs.sn. nm.k mꜣʿt ḥr ḫryw.s. sḫwn.k fndw m ỉmyw.s. ṯn.k ỉm r st špst. sḥtm.k ḫprw m nṯrw(?), *pr ʿꜣ. srf.sn ḫpr mꜣʿ.tỉ m sšm.k tp-ʿ.*

ỉỉ.tỉ m ỉtn, sḫm n pt, ʿbꜣ.tỉ m ḥḳꜣ [*smyt*(?)].(4) *ỉp.k nfrw.k m-m Dꜣt. psḏ.k rk r ỉmyw kkw. ỉmyw ḳrỉwt*(5) *m ḥʿʿwt. dwꜣ.sn tw, spr.k r.sn m ḥr.k pwy n Rsỉ*(6) *... sḏr* (*b*)*kꜣw m ḫrt-hrw ḥḏ tꜣ r* [*mswt.k*]. *... m ỉrw.f, pr m ḫt mwt.f nn ꜣbw, ḥtp m-ḫnw.s r nw*[*.f*].(7)

Hail to thee, master of eternity, who art not weary. Welcome in peace. Thou hast reached the Two Lands, and hast joined the hands of Manu. Thy Majesty has received reverence, thou having been moored at thy temple of yesterday. The arms of thy mother are in protection around thee, the uraeus overthrowing thine enemies.

The spirits of the westerners tow thee on the road which is in the sacred land. Thou lightest the face of those who belong to the netherworld. Thou hearest the call of those who are in the sarcophagus. Thou raisest up those who are laid on their sides. Thou storest offerings with those who possess it (i.e. the

sarcophagus). Thou rejuvenatest the nostrils of those who are in it. Thou art raised up there to the august throne. Thou providest forms as (do) the gods(?) who go forth thence. They are warm when it comes to pass that thou art new in thy former shape.

Thou hast come with thy sun-disk, O power of heaven, endowed with the rule of [the necropolis(?)]. Thou distributest thy beauty in the netherworld. Thou shinest for those who are in darkness. Those who are in the caverns are joyful. They adore thee when thou reachest them with this thy face of the Wakeful One (i.e. Osiris). . . . She who is pregnant (i.e. Nut) goes to rest daily at dawn at [thy birth]. . . . in his form, who goes forth from the womb of his mother ceaselessly, and rests within it in [his] due time.

NOTES

The long address to the setting sun in the Theban tomb of Kheruef (source C) has been remarked upon for its ideas concerning the netherworld. It was, however, neither original nor a single continuous work. Part of it occurs as a temple hymn (no. I*); the portion immediately following it, which is paralleled separately, is given above.

Of the texts C is the most complete, A,B,D having a third or less. E, published only in excerpt, contains parts of the opening paragraph, *ḥnm . . . ỉmȝḫ*; *"wy mwt.k . . . ḥftyw.k* in reverse order. The correspondence of F to C, pointed out by Zandee in *Jaarbericht Ex Oriente Lux*, 16 (1964), 64 f., is intermittent only, and involves the transposition of the sections beginning *sḏm.k nỉs* and *ỉỉ.tỉ m ỉtn*. D has a few corrupt variants which are ignored.

1. C inserts no. I* after the opening. D begins with the following 'Welcome'.
2. D and E have *ḥnm.n "wy.k Mȝnw*, 'Thy hands have joined Manu'.
3. E is written *sỉb*, very unusually determined by a sphinx trampling a serpent, a motif for which Turaiev cites some late parallels; cf. Mallon, A. in *Revue archéologique*, série 4, t.5 (1905), 169 ff. There was evidently a confusion between *sbỉt*, 'uraeus', and *sbỉ*, 'serpent-rebel'.
4. Only the determinative survives (in C).
5. Cf. no. IV*, where the form *ḳrrwt* occurs.
6. F has *m rn.k pwy n Wsỉr*, 'in this thy name of Osiris'. A parallel sentence also with 'Osiris' occurs in Schiaparelli, E., *Museo arch. di Firenze, antichitá egizie* (Rome, 1887), 337.
7. Cf. no. XV.

III*

	Source	*Date*	*Publication*
(A)	Papyrus (Berlin 3002), Thebes(?)	19th Dyn.	Naville, *Todtb.* I, 15B3.
(B)	Stela, Abydos	19th Dyn. (?)	Mariette, *Abydos*, II (Paris, 1880), pl. 57.
(C)	Theban tomb 158(8), south end of hall	19th Dyn.	Seele, *op. cit.* pl. 25 B.
(D)	Ostracon (Cairo inv. no. 2093), Thebes	19th–20th Dyn.	Posener, G., *Ostraca hiératiques littéraires de Deir el-Médineh*, I (1938), pl. 38, no. 1068.
(E)	Papyrus (B.M. 10010, sh. 5, col. 20), Thebes(?)	20th Dyn.	Budge, *BD* 48.
(F)	Papyrus (B.M. 10554), Thebes	21st Dyn.	Budge, *Greenfield*, pl. 7.
(G)	*Ibid.*		*Ibid.* pl. 75.
(H)	*Ibid.*		*Ibid.* pl. 83.
(I)	Paypyrus (Cairo)	21st Dyn.	Naville, *Le papyrus hiératique de Katseshni* (Paris, 1914), pl. 12.
(J)	Papyrus (Turin 1791)	Ptol.	Lepsius, *Todtb.* 15*g*.

ỉnḏ ḥr.k, ỉỉ.tỉ m 'Itm, ḫpr.tỉ m ḳmɜ nṯrw.
ỉnḏ ḥr.k, ỉỉ.tỉ m bɜ bɜw, bɜ[1] *ḏsr ỉmy ỉmntt.*[2]
ỉnḏ ḥr.k, ḥry[3] *nṯrw, sḫḏ Dɜt m ỉrt.f.*[4]
ỉnḏ ḥr.k, nʿy m ɜḫw, sḳdd ỉmy ỉtn.f.[5]
ỉnḏ ḥr.k, ʿɜ r nṯrw nbw, ḫʿ m pt ḥḳɜ Dɜt.[6]
ỉnḏ ḥr.k, wbɜ Dɜt, sšm ʿɜwy smyt.[7]
ỉnḏ ḥr.k, m-m[8] *nṯrw, wḏʿ mdwt ỉmyw ỉgrt.*[9]
ỉnḏ ḥr.k, ỉmy[10] *štɜw.f, ḳmɜ Dɜt m ɜḫw.f.*[11]
ỉnḏ ḥr.k, ỉmy ḏrw nḥḥ, dỉdỉ ʿnḫ n ʿnḫw.[12]
ỉnḏ ḥr.k, wr.tỉ ʿɜ.tỉ. ḫftyw.k ḫr m nmwt.sn.
ỉnḏ ḥr.k. bḥn.n.k sbỉw. sḫtm.n.k[13] *ʿɜpp.*

Hail, thou who art come as Atum, who art come into existence as the creator of the gods.

Hail, thou who art come as the soul of souls, the holy soul who is in the west.

Hail, chief of the gods, who illuminates the netherworld with his eye.

Hail, voyager with sunbeams, traveller who is in his disk.

Hail, thou who art greater than all the gods, who shinest in the sky and rulest the netherworld.

Hail, thou who openest up the netherworld, guide to the double doors of the desert region.

Hail, thou who art among the gods, who judges those in the realm of the dead.

Hail to him who is in his mysteries, who created the netherworld with his rays.

Hail, thou who art in the limits of eternity, who givest life to the living.

Hail, thou who art great and mighty. Thine enemies are slain in their places of slaughter.

Hail to thee. Thou hast driven off the rebels. Thou hast destroyed Apophis.

NOTES

Although it is most familiar in the standard compilations corresponding to Lepsius's Ch. 15 (sources F,J above) and Naville's Ch. 15B3 (sources A,E,I), the hymn also appears independently and in other contexts (B–D,G,H).

Since it offers opportunities for cuts or interpolations in every line, the text was easily adaptable in length. Thus B ends at line 8, E at line 4, D omits lines 7–10, and F line 9, G inserts one line between 8 and 9, and two lines between 9 and 10.

In F,G a repeated prayer that the deceased might be granted 'the sweet breath of life' follows each greeting. A somewhat similar prayer written across the foot of the columns in J may also have been meant to alternate with them in reading.

1. A,E,J omit *bꜣ*.
2. D subst. *ḫrt-nṯr*, 'the necropolis'. A,E have *ḏsrw* (plur.), qualifying the previous *bꜣw*, and E has *ꜣḫt*, 'the horizon', for *ỉmntt*.
3. E subst. *ꜣḫ r*, 'more glorious than'.
4. A,D have *ỉrty.fy*, 'his two eyes', B,F,G,J *nfrw.f*, 'his beauty'.
5. H has *sḳdd Dꜣt m-ḫnw ỉtn.f*, 'who travels the netherworld within his disk'.
6. H *ỉmntt*, 'the west'.
7. G *ỉmntt*.
8. B *sḏm*, 'judge'.
9. A *ỉmntt*; J *ḫrt-nṯr*, 'necropolis'.
10. B,H,I *ỉmn*, 'hidden'.
11. G adds one line: *ỉnḏ ḥr.k, ỉmy Psḏt, nb ỉmꜣḫ*, 'Hail, thou who art among the Ennead, lord of reverence.'

12. F,J omit entirely. G adds two lines:
ỉnḏ ḥr.k, ḥḳ3 nṯrw, nb D3t, ḫnty ḫwt ʿ3t.
ỉnḏ ḥr.k, wr nṯrw, nb ʿnḫ m 3ḫt ỉmntt.
'Hail, ruler of the gods, lord of the netherworld, pre-eminent in the temple.
Hail, greatest of the gods, lord of life in the western horizon.'

13. H inserts *phty*, 'the power (of).'

IV*

	Source	*Date*	*Publications*
(A)	Stela (Berlin 7317) Memphis	18th Dyn.	*Aeg. Inschr.* II, 139 ff.
(B)	Papyrus (Dublin 4)	19th Dyn.	Naville, *Todtb.* I, 15B2. Budge, *BD* 48 ff.

ỉnḏ ḥr.k, Rʿ, [ỉr] tmw,(1) *ʾItm-Ḥr3ḫty,*(2) *nṯr nṯry ḫpr ḏs.f, p3wty ḫpr m ḥ3t. hnw n.k, ỉr nṯrw . . .*(3) *ỉw msktt ỉb.s 3w,*(4) *mʿnḏt m hy-hnw, nmỉ.sn n.k. Nnw m ḥtp, ỉswt.k ḥʿỉ.tỉ,*(5) *sḫr.n 3ḫt.k ḫftyw.k. nḥm nmtwt nt ʿ3pp.*(6)

ḥtp.k nfr, ỉb.k 3w m 3ḫt nt M3nw.(7) *sḫḏ.k ỉm n nṯr ʿ3, nb nḥḥ, ḥḳ3 ỉwgrt . . .*(8) *ỉmyw*(9) *ḳrrwt m tpḥwt.sn, ʿʿwy.sn m ỉ3w n k3.k. ỉmntyw špsw m ḥʿʿwt*(10) *m-ḫt rf psd.k n.sn. nbw D3t ỉbw.sn nḏm, sḫḏ.k*(11) *ỉmntt, ỉrty.sn sš n m33.k. ḫnt*(12) *ỉbw.sn m33.sn tw . . .*(13) *šsp.sn ḥ3tt nt wỉ3.k, ḥtp.k*(14) *m 3ḫt nt M3nw, nfr.tỉ m Rʿ rʿ nb.*(15)

Hail, O Re, [who created] all mankind, Atum-Harakhti, the divine god who came into existence by himself, the primeval one who came into existence in the beginning. Praise to thee, who madest the gods. . . . The night-barque is joyful and the day-barque jubilant when they voyage for thee. Nun is contented and thy crew in exhaltation, for thy uraeus has overthrown thine enemies. Apophis's (power of) motion has been taken away.

Thou settest happily, thy heart being glad in the horizon of Manu. Thou shinest there for the great god, lord of eternity, who rules the realm of the dead. . . Those who are in the caverns in their holes (raise) their arms in rejoicing for thy spirit. The august westerners are jubilant in thy following when thou shinest for them. The lords of the netherworld are joyful when thou illuminest the west, their eyes being opened at the sight of thee. Their hearts are glad when they behold thee. . . . They grasp the tow-rope of thy barque when thou settest in the horizon of Manu, thou being beautiful as Re every day.

NOTES

1. B substitutes *m ḥtp.f*, 'when he sets'.
2. A inserts an apparently derivative passage, part of which occurs also in Davies, *Ramose*, pl. 39: *nb pt, nb tꜣ, ỉr ḫrw ḥrw, nb r ḏr, kꜣ m Psḏt*, 'lord of heaven, lord of the earth, who madest what is below and what is above, lord of all, bull in the Ennead'.
3. A and B diverge at this point. A: '*Itm, sḫpr rḫyt*, etc., 'Atum, who created mankind, etc.' B: '*ḫ pt r ḥpt ỉrty.fy*, etc., 'who raised up the sky so that his two eyes (i.e. the sun and the moon) might travel, etc.'
4. B *m ꜣw(t) ỉb* with the same meaning.
5. B *ḥtp.tỉ*, 'happy'.
6. B inserts *ḥpt tw mwt.k Nwt*, 'Thy mother Nut embraces thee' (cf. note 15).
7. B inserts a phrase which in A appears at a later point: *ỉmntyw . . . ḥ‘wt*.
8. B substitutes *Wsỉr, ḥḳꜣ ḏt*, 'Osiris, eternal ruler', for *nb* etc. A adds *dỉ.k sšp n ntyw mwt, dgỉ.sn nfrw.k*, 'Thou givest light to the dead, that they may see thy beauty'.
9. B has *nbw*, 'the lords (of)'.
10. B subst. for the first three words: *ḏd.sn n.k sprw(t).sn nbt*, 'They utter to thee all their appeals'.
11. B inserts *ỉmꜣwt*, 'the splendour (of)'.
12. B has *ḥ‘.wy*, 'How joyful'.
13. A and B diverge. A: *ḥ‘ ḏt.k ḥr.sn*, etc., 'Thine own self rejoicest on account of them, etc.'. B: *sḏm.k snmw n nty m ḏbꜣt*, etc., 'Thou hearest the prayers of him who is in the sarcophagus' (cf. no. II*).
14. B omits.
15. B adds *ḳnỉ tw mwt.k Nwt*, 'Thy mother Nut embraces thee'.

V*

A comparative edition of this hymn has already been published in Naville, *Todtb.* II, 15B (pp. 25–27), where it is based on five funerary papyri (Leyden T.2, Vatican 63, Berlin 3002, Louvre 3074, B.M. 10010) ranging in date from the late Eighteenth or the Nineteenth Dynasty to the Twentieth. Later parallels in Naville, *Le papyrus hiératique de Katseshni* (Paris, 1914), pl. 12, and Budge, *Greenfield*, pl. 84, add nothing of significance to Naville's earlier texts of which a conflated translation follows.

Praise to thee, Re-Atum, at thy goodly comings, thou who art shining and powerful. [Thou settest in life and splendour in the western horizon in thy domain which is in Manu, thy uraeus being around thee, around thee. Hail to thee, who art in peace, in peace. The eye of Horus(1) has enclosed thee; thou art hidden within its midst. It drives off danger from thee. It makes thee safe that thou mayst live. It extends its protection around thy person.]

Thou crossest the sky and reachest the earth, after thou hast united with heaven at dawn. The two conclaves come to thee bowing down, that they may give thee praise every day.(2) The gods of the west rejoice at thy beauty; those whose places are hidden adore thee. The elders are assembled for thee, that they may do reverence(?). Those who are in the horizon row thee; those who are in the night-barque convey thee. The souls of the west worship thee.(3) They say to thee at thy Majesty's approach: Welcome, welcome, thou having arrived safely. There is jubilation for thee, O lord of the sky, ruler of the west. Thy mother Naunet has embraced thee. She sees her son in thee as the lord of dread, great of majesty, when thou settest in life within the night. Thy father Tatjenen(4) raises thee up; his arms are closed about thee, thou having come into existence, being divine in the body of the earth.

NOTES

1. I.e. the uraeus. See p. 36.
2. Cf. no. III, note 3.
3. Cf. no. III, note 9.
4. Tatjenen, the Memphite earth-god, is here represented as bearing the same relationship to Naunet as Geb does to Nut in the upper world. See Bonnet, *op. cit.* 769 f.

While the fullest version occurs in the standard compilation represented by Naville's Ch. 15B, a shortened form of the hymn, excluding the passage marked above in square brackets, appeared during the Late Period in another traditional collection corresponding to Lepsius's Ch. 15, where it is designated as section *h.* (Budge, *Greenfield*, pls. 84 and 7, contains both versions in their respective contexts). A further variation, classified by Allen in *JNES* 8, 355, as Ch. 15*h* beg. var., and confined to the latter's opening lines, was common on stelae of of the same period.

THE IDENTIFICATION OF HYMNS

The concordance below, besides indicating the contents of the hymns, may be used for identifying other copies. Most of the words listed are nouns, frequently occurring examples and those from rubrics being generally excluded. If no parallel is found, the later traditional hymns published by Allen in *JNES* 8, 349 ff. might be consulted. Only those hymns which first appear during the New Kingdom are covered by the present survey.

Compilations of this period, although often containing the foregoing texts, usually vary in their composition. Where, however, nos. VI, 1V var., X, II var. 3, III*, V* occur in that order (with intervening prayers), the whole would appear

to parallel Lepsius's Ch. 15 (see the table of correspondences on p. 42 above). Extracts from the same collection consisting of adjacent hymns with their associated prayers are also common. A combination of V* and III* would on the other hand probably agree with Naville's Ch. 15B (*Tb.* II, 23 ff).

Although many hymns have not been paralleled, the fact that several are represented here by only two copies suggests that a large number of others may also have been traditional.

CONCORDANCE OF EGYPTIAN WORDS

ꜣḫt, eye (of sun-god), XII; uraeus, IV*.
ꜣḫw, sunlight, VII, XII, III*.
ꜣst, Isis, III (note 1).

i'rt, uraeus, V*.
'Iwnw, Heliopolis, IX.
'Ipt-swt, Karnak, IX.
ỉmyw-htt, apes, XII.
ỉnhtt, apes, V.
ỉrt, eye, VII, III*, IV* (note 3), V*.
ỉḫmw-wrd, 'unwearying' stars, VII.
ỉḫmw-skk, 'imperishable' stars, VII.
ỉswt, crew, I, II, V, XV, IV*.
ỉgrt, realm of the dead, III*, IV*.
ỉtn, sun-disk, III, IV, X, XIV, III*.
ỉtrty, two conclaves, III, V*.

'ꜣwy, double doors, III*.
'ꜣpp, Apophis, III*, IV*.
'nḏw, dawn, V*.

wnwt, hour, IV, XV; uraeus, VI.
Wsỉr, Osiris, I* (see notes), II*(n. 6), IV*(n. 8).
wḏꜣt, udjat-eye, VIII.

bỉk, falcon, I, IV.

Pwnt, Punt, IV var., IX.
pḥ, attack, II.

Mꜣ't, Maat, I, II, IV var., VIII, XII.
mꜣ'w, breeze, II, XI.
Mꜣnw, the West, II var. 2, VII, I*, II*, IV*, V*.
mfkꜣt, turquoise, III.
mnỉ, moor, II*.
Mrty, Two Ladies, V.
mḥ-s, crown of Lower Egypt, VI.
Mḏꜣw, Medjay, IX.

Nỉk, serpent-demon, I, II var. 1.
Nwt, Nut, II, V, also implied in I, IX, XV, II*.
Nbty, Two Ladies, V.
nbw, gold, X.
Nnw, Nun, II, III, IV var., V, X, I*.
Nnt, Naunet, I*, V*.
Nḥb-kꜣw, Nehebkau, I (n. 6).
nšny, danger, V*.

r-pr, temple, II*.
Rsỉ, Wakeful One, II*.
rḳy, enemy, I, I*.

ḥꜣty, cloud, I*.
ḥꜣtt, tow-rope, IV*.

Ḥwt-Ḥr, Hathor, III.
ḥbbt, water (here primeval), III, X.
ḥmt, neshmet-barque, VIII.

ḫftyw, enemies, I (n. 5), II var. 1, V, VI, VII, VIII (n. 2), II*, III*, IV*.
ḫsbd, azure, lapis-lazuli, V (with n. 2).

ḫnỉ, row, III, V*.
Ḫnmw, Khnum, IV.

st, throne, X, II*.
swḏꜣ, make prosper, XIII.
sbỉ, rebel, II, III*.
sbỉt, uraeus, V, II*.
smyt, desert, III, III*; necropolis, II*.
sḳd, sail, IV, III*.
stꜣ, tow, II, II*.
stwt, rays, IV, V, VI, XIV.
sḏm, judge, III*.

šwty, double plumes, I.
šmʿ-s, crown of Upper Egypt, VI.
šnyt, storm, I*.
šnn, encircle, X.

ḳrỉwt, caverns, II*.
ḳrrwt, caverns, IV*.

kꜣrỉ, shrine, III.
knmtyw, stars, I.
Knmty, Kenemty, I.

Tꜣ-ṯnn, Tatjenen, V*.

Dswy, Deswy, II.

ḏʿmw, fine gold, III, IV.
ḏbꜣt, sarcophagus, II*, IV*(n. 13).
Ḏḥwty, Thoth, VI.

ADDENDUM

Pp. 49 f., note 3. Altenmüller, H. in *ZÄS* 92 (1966), 88 ff., proposes to tranliterate the name of the mythical sea as *mr nḫꜣwy*, deriving it from *mr n ḫꜣ*, 'the Sea of Destruction', a place in the solar mythology of the Pyramid and Coffin Texts. This receives some support from Source P, which will be published more fully in *JEA* 53 (1967).

Les Celtes et la Civilisation de La Tène Chez les Géto-Daces

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Les recherches et découvertes archéologiques effectuées pendant ces vingt dernières années en Roumanie ont contribué à approfondir et à augmenter en tous points nos connaissances en ce qui concerne les changements d'ordre ethnographique et culturel survenus dans l'aire carpatho-danubienne à l'époque protohistorique, et le rôle qu'y jouèrent les Celtes pendant le Second Âge du Fer.

Cette fois-ci encore, les résultats de ces recherches ont confirmé la conception scientifique actuelle de l'historiographie roumaine suivant laquelle c'est le développement du substratum local qui constitue le facteur principal, déterminant dans la formation de la culture de La Tène chez les Géto-Daces. À ce sujet, les résultats des fouilles, ainsi que les études ayant trait aux découvertes particulières ou à caractère de vaste synthèse historique, comme celles contenues dans une oeuvre telle que le premier volume de *l'Istoria României* (*Histoire de la Roumanie*), 1960[1], ont abouti à une connaissance plus approfondie de la structure même de ce fonds local, sous le rapport ethnique et culturel, à la veille de l'apparition dans nos contrées du facteur celtique. Il est donc plus facile maintenant d'éclairer le processus des transformations intervenues par la suite dans le vie sociale et économique des autochtones et les rapports actifs établis entre les Géto-Daces et les Celtes.

C'est pour cela que le problème de la présence et de l'influence celtique dans le terrain carpatho-danubien, notamment sur le territoire de la Roumanie, fut posé sur des bases tout à fait nouvelles, tant sous le rapport de la documentation archéologique que de la méthodologie.

Il en résulte que les anciennes trouvailles celtiques de la Roumanie, antérieures à l'année 1944, ont été revalorisées à la lumière de cette conception qui dirige les recherches archéologiques actuelles en Roumanie[2]. De même, la

[1] Une présentation synthétique de la culture, de l'art et de l'histoire politique des Géto-Daces a été faite par C. Daicoviciu dans *Istoria României* I (Histoire de la Roumanie), Bucarest 1960, p. 255 et suiv.; pour les périodes plus anciennes, cf. R. Vulpe, p. 216 et suiv. Tout récemment, l'ouvrage: H. Daicoviciu, *Dacii* (Les Daces), Bucarest, 1965.

[2] Pour la nouvelle conception de la genèse de la civilisation de La Tène chez les Géto-Daces, v.: D. Berciu, 'Descoperirile getice de la Cernavoda (1954) şi unele aspecte ale începutului formării culturii Latène geto-dace la Dunărea de Jos', *Materiale şi cercetări arheologice*, II (1957), pp. 281–317; idem, 'A propos de la genèse de la civilisation de Latène chez les Géto-Daces', *Dacia*, N.S., I (1957), pp. 133–141. V. aussi C. Preda, *Dacia* N.S., III (1959), pp. 179–194.

conception de Vasile Pârvan, le savant roumain qui fut le premier à formuler, il y a 38 ans, une doctrine scientifique ayant trait à la formation de la culture de La Tène chez les Géto-Daces, a été également l'objet de certaines critiques[3]. On sait que la conception de Vasile Pârvan a occupé une place importante dans l'historiographie roumaine et dans la protohistoire de l'Europe, beaucoup de ses éléments gardant encore toute leur valeur. Ainsi, pour ce qui est de l'apport des Celtes aux Géto-Daces, les nouvelles recherches archéologiques témoignent de la validité d'ensemble de la conception du savant roumain suivant laquelle les Celtes auraient joué un rôle positif, créateur, dans le développement de la civilisation des Géto-Daces, rôle que les Celtes ont d'ailleurs joué aussi vis à vis d'autres contrées de l'Europe.

La nouvelle orientation des recherches archéologiques roumaines en confirmant cette conception d'ensemble du savant roumain, met en évidence le rôle des Celtes dans l'évolution des populations des Carpathes et du Bas-Danube, rôle dont l'importance a été niée il y a un quart de siècle pour être attribuée seulement aux Thraces méridionaux[4].

Pour mettre au clair la portée de l'influence de ces deux facteurs, lesquels ont d'ailleurs été actifs concomitamment avec d'autres facteurs, il faut envisager, quant au Second Âge du Fer chez les Géto-Daces, deux étapes, à savoir: 1° celle de la formation de la culture de La Tène et 2° l'étape du développement, du mûrissement et de l'enrichissement ultérieur de leur civilisation.

Pour ce qui est de l'aspect actuel du problème de l'influence celtique sur l'ethnographie et la culture des populations de la région carpatho-danubienne, il nous faut tenir compte, d'une part du stade du développement des autochtones dans la seconde moitié du premier millénaire avant notre ère et d'autre part des autres influences étrangères, car les Celtes se trouvaient ici dans des conditions historiques autres que celles de l'Europe centrale, de l'Italie du Nord, de la péninsule Ibérique, de la Grande Bretagne et de l'Irlande, ou même des Balkans. Il va de soi que nous envisageons leur irruption violente dans les régions du Sud-Est de l'Europe, leur infiltration depuis les centres celtiques plus ou moins durables, leur contact avec les populations de ces contrées qui menait parfois à des symbioses ethniques et culturelles. À ce propos il ne faut pas nonplus perdre de vue les contacts prolongés de la culture celtique avec celle des Scythes sur un large front s'étendant jusqu'en Crimée,—bien que par endroits il n'y ait eu que des éléments de tradition scythe.

[3] Pour la conception de V. Pârvan, qui a occupé une place importante dans l'historiographie roumaine, v. en particulier son ouvrage *Getica. O protoistorie a Daciei*, Bucarest (1926), ainsi que *Dacia: Civilizațiile străvechi din regiunile carpato-dunărene* (traduction R. Vulpe), Bucarest (III[e] éd., 1958); voir également: 'Considèrations sur les sépultures celtiques de Gruia, *Dacia*', I (1924), pp. 35–50.

[4] Quant au rôle des Thraces méridionaux, on a suivi I. Nestor: 'Keltische Gräber bei Mediasch', *Dacia*, VII–VIII (1937–1940), pp. 159–182; cependant on n'a pas encore fait la différence, du point de vue historico-archéologique, entre le secteur thraco-gétique relevant des Thraces méridionaux et la zone thrace du Nord proprement dite, qui était dace.

LES CELTES ET LA CIVISISATION DE LA TÉNE CHEZ LES GÉTO-DACES

L'apparition et l'action du facteur celtique dans la région carpatho-danubienne, au III^es. av. J. C., doivent être envisagées en fonction du fait que vers le milieu du I^er millénaire avant notre ère, la population locale thrace subissait un développement économique, social et culturel différencié. En effet, à ce moment il y avait dans le Sud de la Roumanie, tout au long du Bas-Danube et en Dobroudja, une zone—que nous avons dénommée la zone istro-pontique—dans laquelle les tribus relevant des Thraces méridionaux avaient été entraînées dans un rythme accéléré de développement dès le VII^es. av. J. C., grâce aux causes internes et à l'influence grecque, devenue de plus en plus efficace depuis la fondation de la colonie milésienne d'Istros. L'aristocratie indigène thraco-gète, et en particulier ses plus hauts rangs, bénéficient pleinement de la civilisation grecque. En revanche, les Thraces de la zone septentrionale se développaient d'un rhythme plus ralenti étant exposés à d'autres facteurs extérieurs, bien que certains influx culturels y aient pénétré depuis le Bas-Danube mais sans avoir la même portée. Nous avons donc considéré le problème de la genèse de la culture du Second Âge du Fer autant que la chronologie de la civilisation de La Tène chez les Géto-Daces en fonction de l'existence de ces deux zones, en faisant le départ entre les Thraces méridionaux et les Thraces septentrionaux. Prenant comme base les matériaux archéologiques actuels nous avons essayé d'établir une chronologie de La Tène chez les Géto-Daces, dont fait état le tableau que je me permets de présenter. Néanmoins, l'analyse même de ce matériel nous a conduit à la nécessité d'éclaircir, en premier lieu, *la notion de La Tène* quant à son application au Bas-Danube et ensuite de dissocier la civilisation de La Tène celtique de celle qui appartient à la première étape de La Tène chez les Thraco-Gètes, manifestations qui diffèrent par leur origine ethnique et par les conditions historiques de leur formation. En effet, nous pensons que cette nouvelle étape du Fer n'est pas un phénomène relevant seulement de l'action des Celtes, mais qu'il se manifeste aussi chez d'autres populations parmi lesquelles les Thraco-Gètes de la région istro-pontique. Ceux-ci, étroitement liés aux autres Thraces méridionaux, ont subi, les premiers, l'influence du facteur méditerranéen, telle que la civilisation grecque dont l'action s'est exercée à ce moment-là, bien qu'avec des nuances diverses, depuis le Gibraltar jusqu'aux steppes du Nord du Pont ainsi que sur le rivage occidental de la Mer Noire. Grâce aux contacts avec les Grecs, les tribus thraco-gètes et les Scythes 'royaux' ont été à même de créer une culture originale, propre au *Second Âge du Fer*—que l'on peut appeler conventionnellement la culture de La Tène—avant que les Celtes aient fait leur apparition dans les contrées respectives. C'est alors qu'on constate dans le milieu indigène l'intensification de la métallurgie du fer, la diffusion du tour de potier, la construction de forteresses et *d'oppida* qui attestent à une vive activité économique, militaire,

politique et artistique, ainsi que l'apparition de la monnaie comme moyen d'échange. En outre, l'aristocratie locale jouissant de leur bien-être et désireux de mener une vie de luxe et d'éclat, passe en pleine expansion à la constitution d'organisations politiques (unions tribales). La formation d'une pareille culture dont l'ancienneté est attestée par les matériaux mis au jour ces dix dernières années, a son point de départ dans la zone istro-pontique où l'influence grecque s'est exercée directement ou bien, dans une mesure plus restreinte, par l'intermédiare des Scythes des steppes nord-pontiques. C'est depuis ce foyer du Bas-Danube et du Pont Ouest que les éléments de la nouvelle culture se sont propagés vers la zone des Thraces du Nord à une époque plus tardive, notamment vers la fin du IV^es. av. J.C. et au début du siècle suivant quand s'est déclenché le phénomène celte dans quelques-unes de nos contrées. Tout en relevant l'existence de ces deux zones au moment de l'irruption violente des Celtes, il faut avoir en vue également, à notre avis, le rôle qu'ont joué les Géto-Daces dans leur ensemble, pendant la seconde époque du Fer dans l'aire de leur habitat, — rôle qui peut être comparé à celui des Celtes dans l'Europe centrale et ailleurs. Ce n'est qu' à la lumière de ce fait historique que l'on pourra expliquer la portée véritable de l'influence des Celtes sur les Géto-Daces, ainsi que l'influence de ceux-ci sur les premiers, dans leurs centres mêmes dans l'Europe centrale où des éléments de la civilisation grecque furent répandus justement par l'intermédiare des Géto-Daces.

Sous le rapport chronologique, les plus anciennes découvertes celtiques à l'Est de Tisa, dans le territoire roumain, remontent à 300–280 av. J.C., soit du début de La Tène C, d'après le système chronologique du Centre de l'Europe[5]. Toutefois quelques éléments relevant de ces découvertes gardent encore des traits qui se rapportent à la période antérieure de La Tène B. Ainsi, par exemple, les fibules celtiques mises à jour dans les sépultures de Ostrovul Corbului (Olténie), à Silivaş (Transylvanie) et ailleurs conservent le schéma typique de l'horizon de La Tène B. Il en est de même pour le casque en fer du type italique appartenant au guerrier celte de Silivaş, pour les bracelets de Sărata Monteoru ou pour l'anneau de cheville de la tombe à inhumation de Glăvăneştii Vechi[6] (Moldavie), ou bien encore pour les formes de certains vases façonnés au tour et de facture celtique, etc. Cet ancien horizon chronologique et culturel à caractère celte qui se trouve en Roumanie est attesté tout au long d'une ligne

[5] Les trouvailles celtes faites après 1926, ont été signalées en divers ouvrages dont nous mentionnerons: C. Daicoviciu, *La Transylvanie dans l'antiquité*, 1944, où l'auteur donne une interprétation historique de la documentation archéologique; Dorin Popescu, 'Celţii în Transilvania', *Transilvania*, Sibiu, 74 (1944), pp. 639–666; C. Nicolăescu-Plopşor, *Dacia*, XI–XII (1945–1947), pp. 17–33; D. Berciu, *Arheologia preistorică a Olteniei*, Craiova (1939), pp. 205–218.

[6] Les découvertes de Glăvăneştii-Vechi (Moldavie) et de Sarata Monteoru ont été faites par un groupe d'archéologues sous la conduite de I. Nestor: *Studii şi cercetări de istorie veche*, II, 1 (1951), p. 67; III, 3–4 (1955), pp. 507–508.

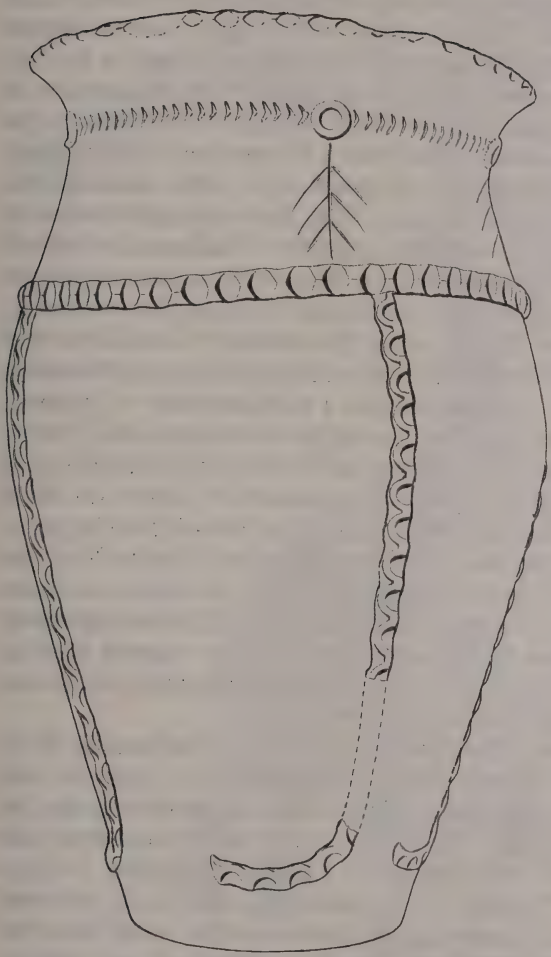


Fig. 1

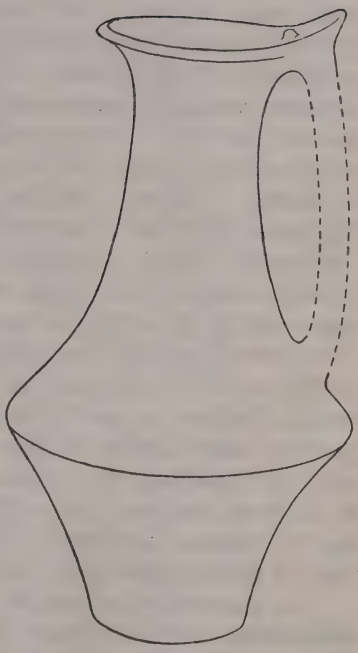


Fig. 2

Fig. 1. Grand vase fait à la main, trouvé dans le site dace d'Ocnitza (Olténie). (*height 51 cms.*)

Fig. 2. Cruche géto-dace trouvé dans l'oppidum de Popești; II^{e}–I^{e} av. J.C.; d'après R. Vulpe. (*height 17 cms.*)

allant depuis le bassin supérieur du Someş vers la vallée moyenne du Mureş jusqu'au Sud-Ouest de la Roumanie (Olténie-Ouest). Les trouvailles de Sărata Monteoru témoignent du passage des premières influences celtiques au Sud des Carpathes, tandis que celles de la vallée du Jijia (Glăvăneştii Vechi) indiquent une route vers le Sud-Est, vers l'Ukraine et la Crimée. A ce même horizon celtique, datant de la première moitié du III^es. av. J.C. — ou au plus tard du milieu de ce siècle — appartient également la fibule du type Dux (Duchov) que nous avons trouvée en 1963 lors des fouilles faites à Govora-sat, dans le Nord-Est de l'Olténie. Cette découverte atteste au moins à un influx culturel celte venant de la Transylvanie à travers la vallée de l'Olt, sinon à la pénétration de certaines bandes de guerriers celtes au Sud des Carpathes. D'ailleurs, à la période qui suit La Tène C2 une pareille infiltration est démontrée par les sépultures celtiques à incinération de Băbeni, Siseşti, Corlatele et Corneşti. Les trouvailles de Hatzeg — Silivaş — Mediaş — Rîşnov, ainsi que celles de Galatzii-Bistritzei (région de Cluj)[7] et de Ciumeşti (Maramureş) — où a été identifié un établissement à éléments culturels celtiques et quelques tombes à mobilier celte — prouvent que les Celtes ont pénétré non seulement par les vallées du Mureş et du Tîrnave, mais aussi par la vallée du Someş. Ces groupes du Nord et du Nord-Est de la Transylvanie ne sont pas étrangers au large mouvement des Celtes du début du III^es. av. J.C. se dirigeant par la suite probablement par les cols des Carpathes vers la Moldavie ou par le Nord de ces monts vers l'Ukraine. Plus au Nord ces guerriers celtes étaient en liaison avec ceux de la Pologne. De même, les traces celtes du Sud-Ouest de l'Olténie (Ostrovul Corbului et Rast), datant également de la phase ancienne de La Tène C1, peuvent être mises en rapport avec les centres celtiques du Banat et de la Serbie et avec les changements intervenus dans les Balkans peu après l'an 280 avant notre ère.

En examinant la carte de la répartition des premiers témoignages de la pénétration des Celtes dans le terrain carpatho-danubien, on s'étonne tout d'abord de l'absence de pareilles antiquités celtiques dans la plaine valaque, au sud de la Moldavie et en Dobroudja. Bien qu'il ait été répéré dans cette aire certains éléments celtes, comme à Govora-sat et à Sărata Monteoru — mentionnés ci-dessus — comme à Tinosu sur la Ialomitza, où il a été retrouvé un vase celtique, il ne s'agit pas de la présence de guerriers celtes, mais bien d'un influx culturel celte de La Tène; cependant le milieu culturel de ces contrées revêtait déjà à l'aspect de La Tène.

[7] La carte de la dispersion des Celtes et de la diffusion de leur culture sur le territoire de la Roumanie a été publiée par nous en: *Rumania before Burebista* (1966, sous presse), dans la collection 'Ancient Peoples and Places' publiée par Thames and Hudson à Londres; ici se trouve aussi le tableau chronologique pour la civilisation de La Téne gèto-dace.

Fig. 3. Le casque celtique de Ciumesti (Maramures); fin du III^e–première moitié du II^e's. av. J.C.; d'après Vlad Zirra.

Il nous faut poser ici une question toute naturelle: comment s'explique le fait que les Celtes n'aient pas pénétré aussi dans la plaine gétique si fertile du Danube et vers les rives orientales de ce fleuve? La réponse nous est donnée par les sources littéraires antiques qui font mention à cette époque, dans ces parages, de l'existence d'une formation politique et militaire fortement organisée, ayant à sa tête un dynaste, la *basileus* Dromichaïtès. Ce fut cette formation militaire qui enraya la marche des Celtes vers les bouches du Danube et vers les villes grecques du littoral occidental de la Mer Noire et préserva ces régions des rapines de ceux-ci à l'époque de leur irruption violente.

Il ressort de ce qui précède que les Celtes n'ont fait leur apparition dans le terrain carpatho-danubien qu'après l'an 300 avant notre ère pénétrant en Transylvanie par les vallées du Someş, du Mureş et des Tîrnave et dans le Sud-Ouest

Fig. 4

Fig. 4. Fibule celtique de la période de La Tène III*a* (D_1) trouvée dans un établissement dace de Govora Sat, dist. de Rîmnicu-Vîcea. (*length 19·5 cms.*)

de la Roumanie, par la vallée du Danube, s'installant en Olténie près des Portes-de-Fer. Ainsi une vaste région habitée par les tribus des Géto-Daces n'a même pas été atteinte lors de l'invasion violente des bandes de guerriers celtes pendant la première moitié du III^e^ siècle av. J.C.; aussi le territoire géto-dace soumis à leur influence à ce moment-là en fut-il diminué d'autant. C'est justement la région istro-pontique, entraînée vers le Second Âge du Fer depuis le milieu du V^e^ s. avant notre ère, donc *avant qu'une influence celtique quelconque* y fût intervenue, comme je l'ai indiqué ci-dessus, qui n'a pas été atteinte par l'invasion celtique.

Par contre, au moment de l'arrivée des Celtes en Transylvanie, dans le Nord et au Centre de la Moldavie ainsi que dans le Sud-Ouest de la Roumanie il y avait une forte culture hallstattienne relevant des Thraces septentrionaux.

Cette culture contenait, à l'exception toutefois de la Moldavie et de la périphérie des Carpathes méridionaux (où l'on rencontre des traces celtes), — un composant ethnique et culturel illyrien, qu'on trouve également dans l'Est de la Hongrie. De même, le composant de tradition 'scythe' ou 'pseudo-scythe' persistait encore à ce moment-là dans toute la zone carpathienne. L'influence grecque s'affirmait elle aussi par l'intermédiaire de certains objets importés. Les liens avec la zone istro-pontique ne manquaient pas non plus. Donc, la population géto-dace, grâce à son propre développement intérieur et sous l'influence de ces divers facteurs, avait été entraînée elle aussi vers la civilisation de La Tène lorsqu'à ces influences diverses vint s'ajouter au début du III^e siècle avant notre ère l'influence celte. C'est depuis lors que commença, dans l'histoire des Géto-Daces, la période durant laquelle les Celtes ont eu, en effet, le rôle 'd'intensifier les formes de la culture et de la civilisation nouvelle (La Tène) qu'ils ont transmis aux Thraces du Nord' (C. Daicoviciu, 1945). Les Celtes ont certainement constitué l'un des facteurs actifs qui ont fait fructifier certaines formes locales géto-daces dans une mesure que l'on connaît mieux aujourd'hui qu'à l'époque où Vasile Pârvan publiait son oeuvre de fond 'Getica' qui traitait des actions et des influences réciproques entre ces deux populations.

Il faut en premier lieu analyser l'apport celtique et ainsi la durée du rôle actif des Celtes dans le développement des autochtones géto-daces.

Si, du point de vue ethnique, les Celtes de l'intérieur du monde géto-dace ont été assimilés dans un court laps de temps par les autochtones, malgré l'existence d'importants foyers celtiques aux alentours de ce monde (tels ceux des Scordisques, des Taurisques et des Boïens), il n'en reste pas moins que le facteur celtique a fait une contribution active au développement des autochtones de la zone carpathienne, dûe principalement aux conditions favorables créees par ces foyers. Le facteur celtique a participé en premier lieu à la formation de la culture de La Tène dace et ensuite à son développement et à la généralisation de ses éléments fondamentaux sur l'ensemble des territoires habités par les Géto-Daces. Cette double action du facteur celtique a été facilité par l'existence d'une culture relevant des Thraco-Gètes qui dérivait du fond local hallstattien influé par le facteur gréco-hellénistique, lequel était à la base de la culture celtique de La Tène en Europe Centrale. Les traditions scythes ont peut-être ralenti en quelque sorte le rythme du processus de transformations dans le sens de La Tène, mais il est à remarquer qu'au moment de sa diffusion dans la région carpatho-danubienne, la culture scythe même était déjà, dans sa structure et dans sa tendance, une civilisation de La Tène.

Les Celtes ont contribué à la propagation des connaissances de la métallurgie du fer qui s'intensifie de plus en plus, le fer devenant un métal populaire qu'on peut dorénavant trouver dans les cabanes les plus modestes des habitants

daces. Des centres métallurgiques daces surgissent dans les régions riches en gisements de fer, dans les régions des monts Oraştie, là où seront bâties les importantes forteresses des Daces. Les indigènes adoptent des types d'outils celtes tels les forces; aussi les objets de parure du type celte sont-ils répandus partout. Les Daces, tout en adoptant des modèles celtes, parviennent à en créer des types originaux, telle la fibule en argent à nodosités qui, bien que façonnée d'après un type celte, est devenue une forme caractéristique de la culture matérielle dace.

Les Celtes ont répandu également dans la zone du Nord des Carpathes le tour de potier qui, en se généralisant peu à peu, a donné naissance à un véritable art de la poterie, basé sur cette invention que les Thraco-Gètes du Sud-Est connaissaient et utilisaient déjà depuis un siècle et demi. Sans doute les autochtones de la zone des Carpathes auraient pu, eux aussi, la connaître fortuitement par l'intermédiare de la culture 'scythe' et par les importations grecques, mais cette invention n'étant pas adoptée alors par les indigènes elle n'avait pas encore entraîné de changements d'ordre économique et social. Le contenu de la culture locale a été enrichi par la diffusion et l'assimilation des éléments culturels celtes. On décèle des influences pareilles dans le domaine militaire, dans l'art, etc. A ce sujet nous nous rappellerons la large diffusion des fibules celtes chez les indigènes daces, ainsi que celle d'autres biens culturels celtes. Parmi ces éléments il convient de mentionner ici encore la céramique peinte dont on a retrouvé des exemplaires sur les sites daces de La Tène à Ocnitza (Olténie) et à Popeşti sur Argeş (près de Bucarest).

A la fin de cet exposé, nous nous reporterons à un aspect tout à fait nouveau des relations entre les Géto-Daces et les Celtes, à savoir, celui de l'influence qu'auraient exercée à leur tour les autochtones sur les Celtes et de la portée de cette action. En effet, la documentation archéologique récente témoigne d'une symbiose daco-celtique réalisée en quelques endroits. Nous mentionnerons à ce propos des éléments caractéristiques indigènes retrouvés dans des tombes celtes. Ainsi, à Galatzii Bistritzei, une sépulture celte a livré un vase à anse surélevée, de tradition locale hallstattienne tardive[8]; c'est la cruche bitronconique à anse, maintenue et généralisée par la civilisation de La Téne des Géto-Daces. D'une autre sépulture celte, cette fois-ci au milieu du Danube à Ostrovul Corbului, on a ramené une urne funéraire à profil bitronconique façonnée à la main, de

[8] Le mobilier des tombes de Galaţü-Bistriţei donne un caractère représentatif au groupe celte découvert plus récemment dans le nord-ouest de la Roumanie: Şt. Dănilă, 'Inventarul unor morminte de incinerație din sec. III–II î.e.n. (L'inventaire de quelques tombes à incinération des III–II[e] siècles av. J. C.), *Activitatea muzeelor noastre*, Cluj (1955), pp. 89–99. Les fouilles récentes de Ciumeşti, au Maramureş—à l'extrémité nord-ouest du territoire de la Roumanie—ont été faites sous la direction de Vlad Zirra. Une courte mention en est faite par M. Russu, dans: J. Filip, *Handbuch zur Vorgeschichte Europas*, I, s.v. *Ciumeşti*: nous devons certaines données supplémentaires à l'amabilité de M. Vlad Zirra.

facture locale, couverte d'une écuelle-couvercle, faite au tour, de facture celte. Les découvertes faites en Olténie, et aussi en Transylvanie, qui ont mis au jour des armes du type local dans des tombes de guerriers celtes, ont une importance particulière pour l'interprétation historique et ethnographique des rapports établis entre les Celtes et les Géto-Daces. Il s'agit du couteau de bataille recourbé (*sica*), lequel, comme on le sait, est un produit thrace ou thraco-illyre. La *sica* a été retrouvée par exemple dans les tombes celtes de Silivaş (Transylvanie), à Corneşti, Orodel, Siseşti, Golentzi, Rast, Viaşu, Sărata-Călăraşi, etc., toutes des localités situées en Olténie[9]. Les Celtes ont utilisé cette arme d'origine autochtone durant une longue période, ce qui est indiqué par la différence chronologique qui existe entre ces sépultures. Ainsi, la tombe de Silivaş est la plus ancienne de cette série, tandis que celles de Corneşti et de Viaşu datent de la fin de la phase de La Tène C2 et du début de la phase suivante (La Tène D1). Ces trouvailles soulèvent la question de la façon dont certains groupes de guerriers celtes ont persisté à l'intérieur même des territoires habités par la masse des Géto-Daces jusqu'au début du I^er^ s. avant notre ère ; certes, les Celtes de l'intérieur peu avant Burébista avaient été déjà assimilés, tandis que quelques centres aux alentours du monde géto-dace furent eux aussi détruits par Burébista. Il faut signaler une forte influence dace au centre des Scordisques ; à Sotin, par exemple, on a retrouvé dans des tombes celtes le sabre recourbé dace (*sica*) et dans d'autres localités de ce centre il a été relevé nombre d'éléments culturels celtiques portant l'empreinte d'une influence exercée par les Daces (bracelets, fibules, etc.). On rencontre une situation similaire en Bulgarie de nord-ouest.

Les rapports actifs entre les Celtes et les Géto-Daces mettent en relief l'importance particulière du fond local sur l'ensemble du territoire habité par les Daces qui, juste à ce moment-là, atteignent leur plein essor dans le domaine de l'économie, de l'organisation sociale et de la civilisation dont l'originalité ne saurait être contestée. Cette originalité ainsi que l'unité de la culture de La Tène des Géto-Daces témoignent, à notre avis, du rôle historique de ceux-ci même à l'époque du contact avec les Celtes en tant que créateurs d'une civilisation sur toute l'étendue de leur habitat, dans laquelle les éléments gréco-hellénistiques, venus du Pont et du Midi, tiennent une place notable. Par ailleurs, en assimilant certains éléments celtiques dont il faut écarter la monnaie géto-dace qui a une origine locale, la culture des Daces fut mise en rapport avec la civilisation de La Tène de l'Europe centrale, les Celtes représentant à ce moment-là l'élément de liaison ethnographique entre le Sud-Est de l'Europe et l'Europe Centrale.

[9] Sur l'inventaire des sépultures celtes de Corneşti et de Corlate: Dorin Popescu, 'Două descoperiri celtice în Oltenia' (Deux découvertes celtiques en Olténie), dans *Studii şi cercetări de istorie veche*, XIV, 2 (1964), pp. 403–412. Les matériaux de Viiaşu et de Sărata-Călăraşi, ici même, Fig. 7, que nous publions grâce à l'amabilité du directeur du Musée de Craiova, Firu et de G. Popilian.

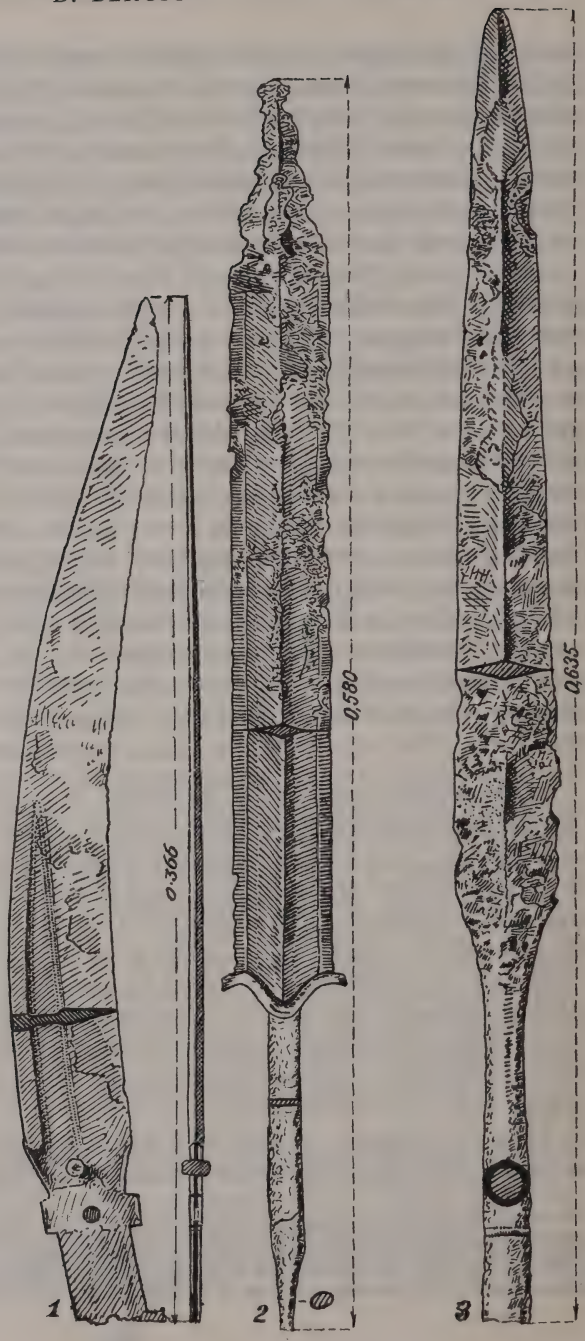


Fig. 5. *Sica* (1) et pointe de lance en fer (3) provenant d'une tombe celtique de Viiasu, distr. de Bailesti (Olténie); (2) épée celtique de Sarata-Calarasi, distr. de Corebia (Olténie); elles se trouvent toutes an Musée de Craiova.

Récemment encore on ne connaissait pas de sites celtiques en Roumanie. Ce n'est qu'en 1963 que l'on a identifié à Ciumeşti (Maramureş) une nécropole celtique d'où il a été ramené un casque en fer surmonté d'un aigle aux ailes déployées en bronze, ainsi qu'un site à cabanes contenant un matériel celte, tels que fibules, vases façonnés au tour, objets en fer, etc., identiques à ceux que l'on a recueillis dans le cimetière. Les cabanes celtiques de ce site contenaient également de la poterie faconnée à la main, d'une facture locale géto-dace. Une situation en quelque sorte analogue a été relevé dès 1950 à Rast (Olténie) et à Moreşti (Transylvanie). Par contre, à Ocnitza et à Govora-sat, c'est de la céramique celte que l'on a retrouvée, en assez grande quantité, dans un milieu dace[10]. Les Celtes furent également influencés par les autochtones dans le rite et le rituel funéraires. Les sépultures celtes à incinération dans des urnes à couvercle en constituent un exemple évident.

Cependant, le problème des rapports actifs établis pendant une longue période entre la culture de La Tène relevant des Celtes et celle des Géto-Daces, ainsi que celui de la symbiose culturelle réalisée par ces deux populations sur les territoires qu'elles habitaient, devraient faire à l'avenir l'objet de recherches plus approfondies. En cette occasion il nous faudrait tenir compte du fait qu'en ce moment, on n'a relevé dans l'aire de l'habitat des Géto-Daces ni forteresses ni sites fortifiés celtes, celui de Zidovar étant attribué par la plupart des archéologues aux Daces, et non pas aux Scordisques; de même, les sites fortifiés (*oppida*) des Carpathes Occidentales — aux monts de Tatra — en Slovaquie et en Pologne révèlent une forte symbiose daco-celte[11].

Un autre fait qui pourrait être mis en avant au sujet du mélange des Celtes avec la population locale serait le célèbre chaudron en argent de Gundestrup (au Danemark) lequel, d'après le style et la technique de ses représentations, est assigné à une population celte vivant au moyen Danube, telle que les Scordisques (T. G. E. Powell, *Die Kelten*, p. 181). Suivant une autre opinion (Drexel, 1915), les personnages y figurés seraient des Daces: de la sorte nous nous trouverions en présence du portrait le plus ancien de nos ancêtres. A ce sujet nous pensons que l'ensemble des problèmes soulevés par la trouvaille de Gundestrup doit être éclairci en tenant compte également de la découverte du casque celtique de Ciumeşti (II[e] s.) et du style qui caractérise l'art thraco-gète et qui est illustré par le mobilier du tombeau princier d'Agighiol. Quoiqu'il en soit, la symbiose

[10] Les fouilles de 1960–1962 ont été entreprises par nous, avec la collaboration de P. Purcărescu, à Ocniţa, dans le nord-est de l'Olténie, comme à Govora-sat (1961–1965).

[11] Sur l'*oppidum* de Židovar: Br. Gavella, *Kelski oppidum Židovar*, Belgrade (1952). Pour la symbiose daco-celte dans la région de Belgrade et ailleurs dans le nord-est de la Yougoslavie, cf. M. Garašanin, *Recueil de travaux de la Faculté de Philosophie*, Belgrade, VII, 1 (1963), pp. 45–53 et en *Hommage Pedro Bosch-Gimpera*, Mexico (1963), pp. 173–180. I. Todorović, 'Sur quelques éléments de continuité dans la civilisation Latène de la Serbie', dans *Actes du VII[e] Congrès de la Soc. Arch. yougoslave*, Belgrade (1964), pp. 73–74.

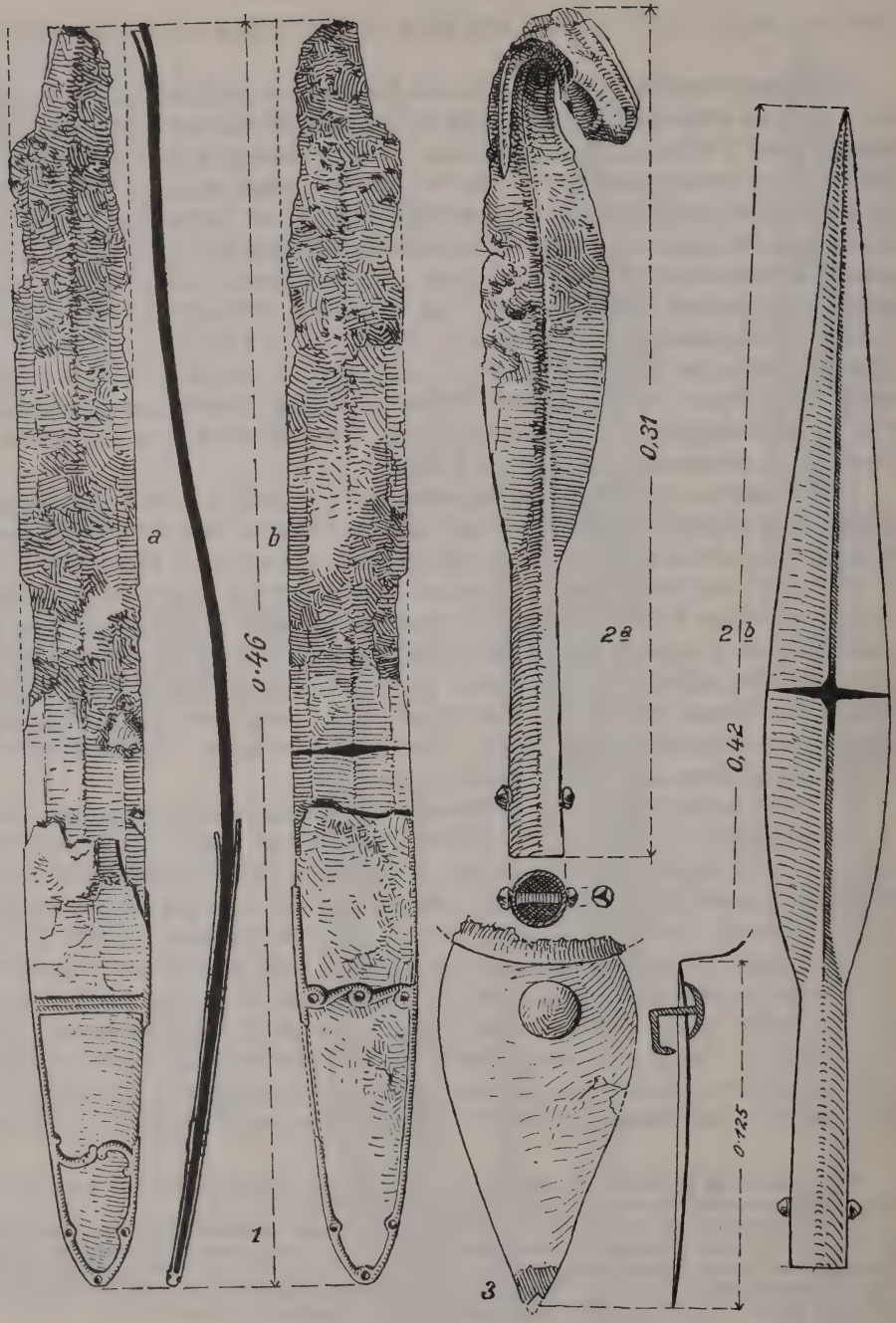


Fig. 6. Plosca, distr. de Vailesti (Olténie); objets provenant d'une tombe celte; (1) épée conservant des restes de son fourreau; (2 a–b), pointe de lance en fer passée au feu, repliée; (3) fragment de l'*umbo* d'un vouclier; Musée de Craiova.

des Daces et de la peuplade celte des Scordisques est attestée par les auteurs antiques et les trouvailles récentes faites en Olténie et en Yougoslavie sont venues justement confirmer leurs affirmations quant au caractère mêlé de la population de cette contrée située près des Portes-de-Fer.

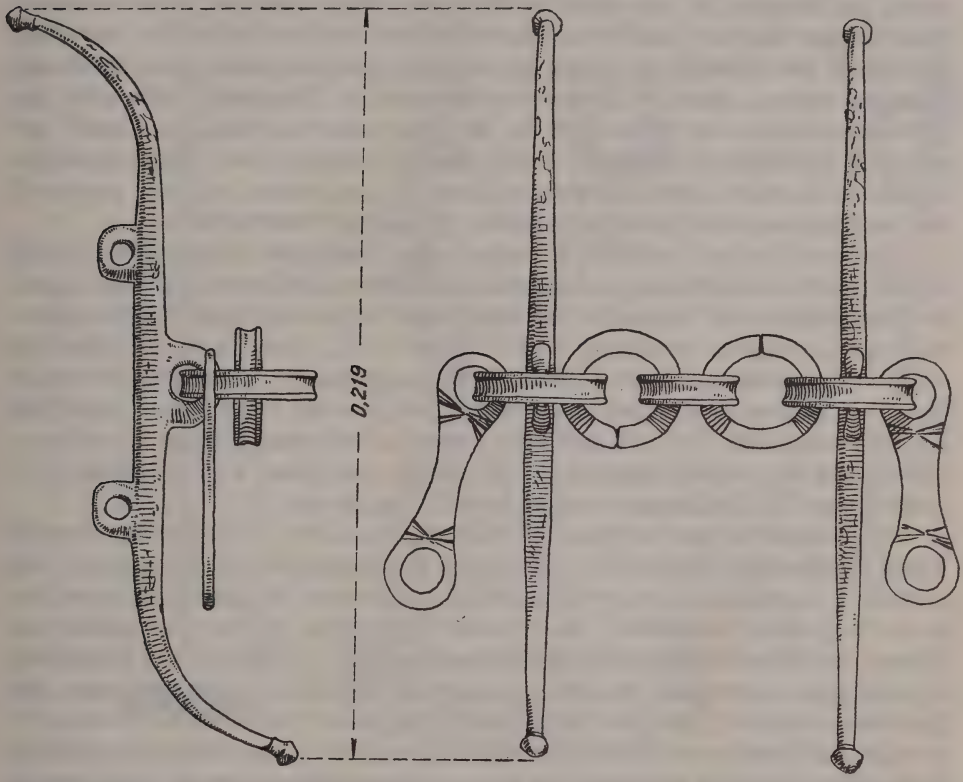


Fig. 7. Viiasu, distr. de Bailesti (Olténie); mors en fer provenant d'une tombe de l'époque de La Tène; Musée de Craiova.

Il nous faut faire mention d'une autre influence exercée par les Géto-Daces sur les Celtes, celle du rite funéraire. La documentation archéologique actuelle se rapportant à la Roumanie a apporté la preuve de l'existence chez les Celtes qui ont pénétré à l'intérieur du territoire habité par les tribus géto-daces, d'une période de transition de l'inhumation à l'incinération, rite que les autochtones ont transmis aux nouveaux venus. Un double rite funéraire a été répéré dans la nécropole celtique de Mediaş, dont le mobilier des tombes aux date du début

de la phase de La Tène C; à Glăvăneştii Vechi on a affaire aussi à un double rite funéraire. Pour ce qui est de l'incinération, conformément au rituel adopté par les Celtes, les cendres résultant de la crémation étaient déposées dans une fosse aménagée exprès ou à même la terre auprès des vases et quelquefois dans des urnes portant maintes fois un couvercle. Les sépultures celtes renferment parmi les éléments de leur mobilier des armes (épées typiques, *sicae* couteaux pour frapper d'estoc) passées au feu et repliées lors des funérailles. Autrefois on croyait que c'étaient les Celtes qui auraient introduit cette pratique rituelle dans ces régions, mais les découvertes récentes en Roumanie, telle celle des nécropoles thraces de Ferigile et de Bîrseşti, datant du Hallstatt tardif, ont attesté à l'existence d'un pareil rituel plusieurs siècles avant l'apparition des Celtes au Danube et aux Carpathes. Donc ce sont ceux-ci qui ont emprunté aux autochtones cette pratique funéraire, et non pas inversement.

De tout ce qui précède, il ressort que l'ancienne conception suivant laquelle les Celtes auraient joué un rôle déterminant, unilatéral et à effets égaux et concomitants sur l'ensemble des territoires habités par la population géto-dace qu'ils auraient entraînée vers l'époque de La Tène, ne peut plus être valable d'une façon globale. Une pareille conception qui ne tenait pas compte des circonstances historiques et culturelles propres aux Géto-Daces partait de l'opinion courante il y a 38 ans selon laquelle le facteur celtique aurait contribué dans les diverses contrées de l'expansion des Celtes à la formation d'un fond réceptif de l'influence romaine, exercée par la suite.

Certainement, pour expliquer l'influence des Celtes, on a posé la question d'une domination effective des Celtes sur les régions où l'on a retrouvé des cimetières ou des sépultures appartenant à des guerriers celtes, ainsi que la question de la durée d'une semblable 'domination'. A ce sujet, il n'est pas possible de donner une réponse définitive et globalement valable, à la lumière des trouvailles archéologiques actuelles, encore sporadiques. En effet, si les sépultures des guerriers celtes de la périphérie du monde géto-dace, principalement celles de la vallée du Danube en Olténie, datant de la période de transition entre la phase de La Tène C2 et D1 (aux environs de l'an 100), ou plus anciennes, représentent des infiltrations celtes ayant leur point de départ aux foyers des Scordisques qui se trouvaient aux alentours du monde géto-dace et qui auraient pu avoir quelque autorité avant l'an 100 avant notre ère dans le Sud-Ouest de l'Olténie, celles de l'intérieur de cette même province — comme par exemple la tombe de Corneşti — ne pourraient s'expliquer de la même façon. Faute de sites d'habitats plus prolongés relevant des Celtes, on ne pourrait plus faire état d'une domination effective des Celtes sur les tribus géto-daces après leur irruption violente; une pareille hypothèse est également soutenue par l'absence de forteresses celtes sur l'aire d'habitat relevant des Géto-Daces.

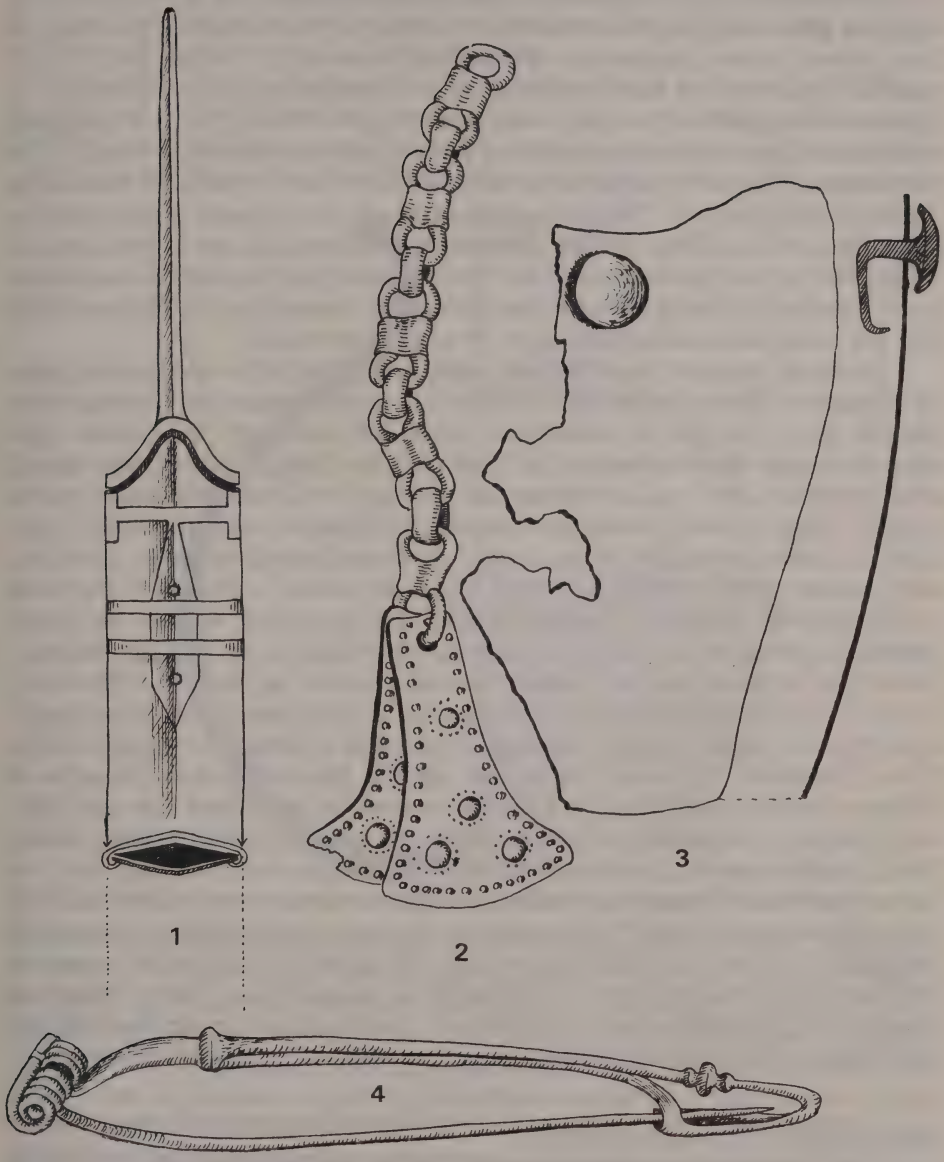


Fig. 8. Corlate, distr. de Bailesti (Olténie); objets provenant d'une tombe celtique d'incinération

Pour ce qui est de la portée de l'influence des Celtes sur la civilisation de La Tène géto-dace, loin de constater une 'celtisation' de la culture géto-dace, il faut relever la continuation des éléments de base de la culture locale qui a assimilé également les biens culturels celtes. Cette influence s'est exercée à la faveur des rapports d'un long voisinage, rapports basés sur des emprunts réciproques qui ont suivi les premiers heurts entre les nouveaux venus et les autochtones. Les deux populations ont participé à des expéditions communes contre la Macédoine et l'Illyrie romaines (II^e s.). Ces rapports actifs entre les Géto-Daces et les Celtes ont été déterminés, à notre avis, par la présence sur l'ensemble des territoires relevant des Géto-Daces d'une population assez dense pour l'époque et dont la culture caractérisant le Second Âge du Fer avait déjà pris son point de départ au milieu du V^e s. avant notre ère.

En ce qui concerne la civilisation celtique attestée par les découvertes faites en Roumanie elle est composée d'éléments et de matériaux que l'on rencontre partout dans des sites et nécropoles celtes. On rencontre les mêmes types caractéristiques de la culture de La Tène chez les Celtes, à savoir: des épées à deux tranchants de 1 m., ou même plus, de long; de lourds couteaux courbés pour la frappe d'estoc; des fers de lances; des chars de combats à deux roues dont les jantes portent des barres en fer; des forces pour la tonte des moutons; des ciseaux pour le jardinage, divers objets de parure — fibules en bronze et en fer, colliers, ceintures, bracelets divers, aux demi-oves, simples aux bouts terminés en boutons arrondis, ou enfin du type tubuleux de tradition hallstattienne qui ne pouvaient être utilisés comme anneaux de cheville (Glăvăneştii Vechi); il y a aussi des bracelets en verre bleu. L'émail aussi a été utilisé dans la confection des bijoux, comme témoigne le fragment de fibule du type de La Tène C de Curtuişeni. Des oeuvres d'art qui peuvent être rapprochées de celles de l'Europe centrale ou de l'est de l'Europe centrale ne manquent elles non plus. A ce propos, la figurine très bien conservée de Luncani (anciennement Grind, Sind), représentant en traits réalistes et vigoureux un sanglier, offre une très bonne parallèle à l'exemplaire de Bàta (Hongrie) et, sous un rapport, à celui de Tabor (Tschécoslovaquie)[12]. Le casque de Ciumeşti rentre également dans cette catégorie d'oeuvre d'art. En Roumanie il a été recueilli de même des monnaies celtiques, dont nous relèverons le trésor de Geoagiul de Sus (Transylvanie) qui constitue 40 pieces d'or du type de Biatec[13]. La céramique peinte d'une facture supérieure — des bandes parallèles peintes en rouge sur le fond blanc du vase —

[12] Le matériel comparatif pour la figurine du sanglier de Luncani, se trouve dans J. Filip, *Die keltische Zivilisation und ihre Erbe*, Prague (1961), Fig. 14.

[13] Sur les découvertes et problèmes se rapportant à la présence des monnaies celtes dans le territoire de la Roumanie, voir plus récemment: Mitrea Bucur, 'Descoperirea monetară de la Tămădău-Mare (reg. Bucureşti) şi problema monedelor celţilor-boi în Dacia, dans *Studii şi cercetări de numismatică*, I (1957), pp. 19–29; N. Lupu, Două monede celtice de tip Nonnos descoperite în Transilvania, *Stud. şi cercetări de numismatică*, III (1960), pp. 81–88.

atteste aussi à la maîtrise des Celtes. Tout cela peut expliquer le rôle important que jouèrent les Celtes dans la région carpatho-danubienne aussi au moment de l'essor de la culture de La Téne gèto-dace.

Toutefois, tout en gardant ses éléments de base, la culture de la 'Celtique danubienne' et des Carpathes présente aussi quelques éléments nouveaux qui résultent des conditions particulières où vivaient les Celtes dans ces régions, parmi les autochtones qui possédaient eux aussi un haut niveau de vie matérielle

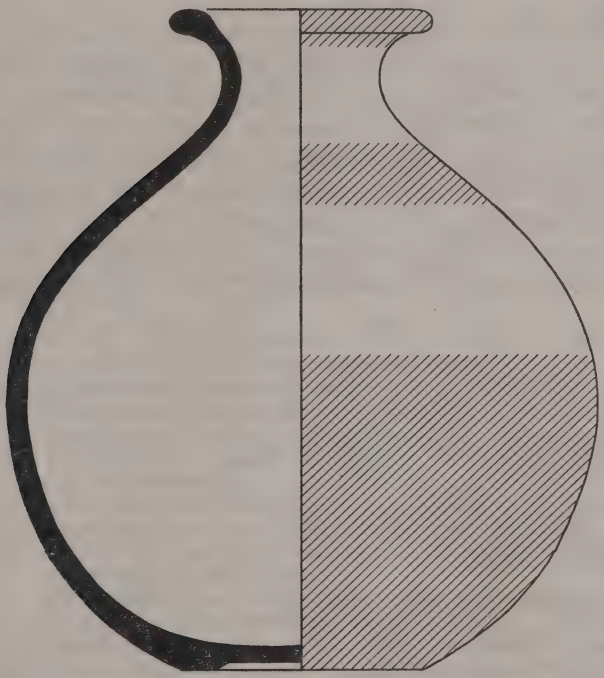
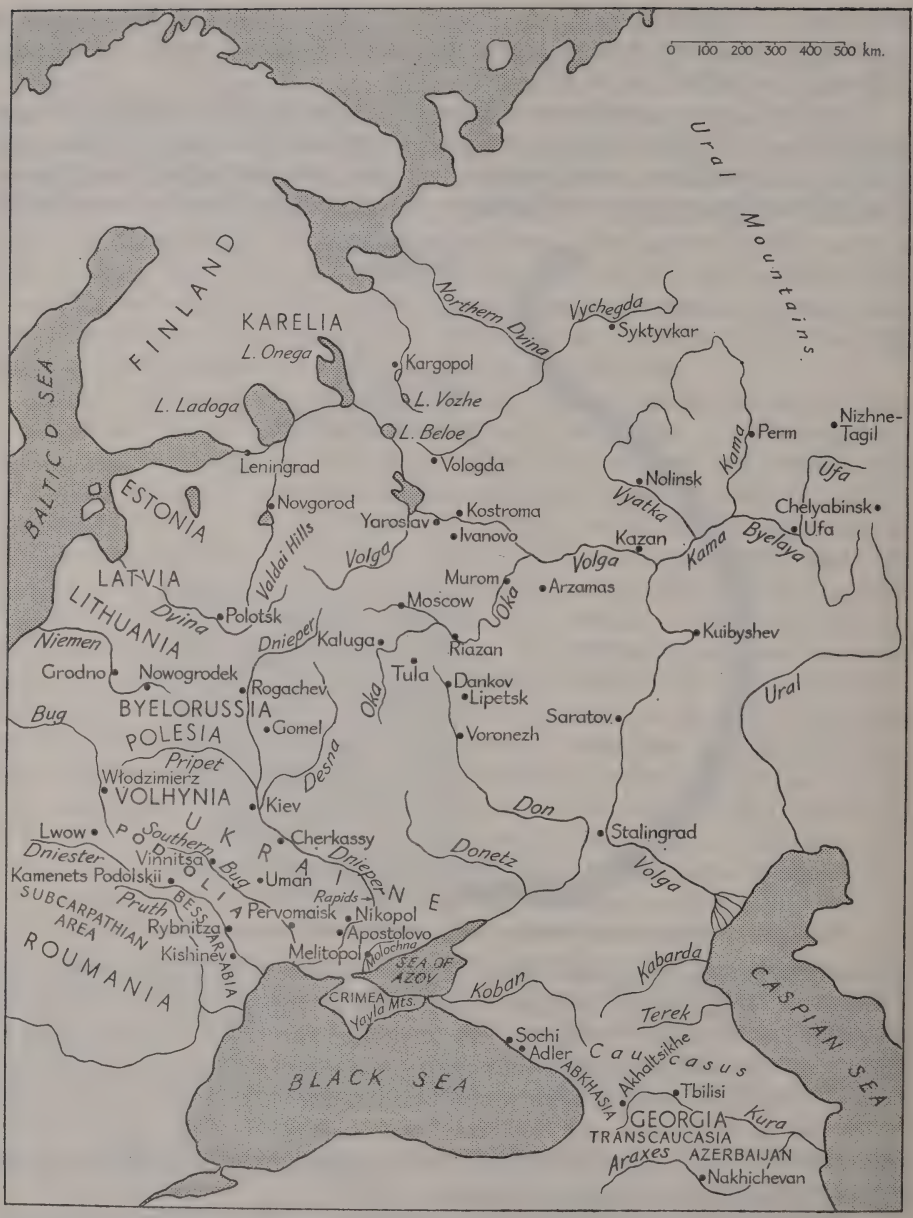


Fig. 9. Vase peint (blanc et rouge foncé) trouvé à Popesti sur l'Arges. (*height 17·8 cms.*)

et spirituelle. En achevant mon exposé, je tiens à mettre en évidence l'affirmation de Dr. F. R. Hodson qui, l'année passée, attirait l'attention sur le fait que la culture de La Tène sur l'ensemble des territoires relevant de cette culture ne présente qu'une unité apparente au point de vue culturel, historique et chronologique[14]. C'est à la lumière de cette constatation que nous nous sommes ingénié à faire état de l'influence que les Géto-Daces eurent eux aussi sur les Celtes. Mais, comme je l'ai indiqué ci-dessus, cette question de la symbiose daco-celte devra être étudiée de plus près à l'avenir.

[14] Pour la diversité du développement dans le cadre de l'unité de la civilisation de La Tène celte, voir aussi F. R. Hodson, 'Les périodes de La Tène en Suisse et dans les Iles Britanniques', dans *Celticum*, VI (1963) pp. 75–80.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Perm
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Ufa
Nolinsk
Vyatka
Chelyabinsk
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Byelaya
Kama
Volga
Leningrad
Vologda
Novgorod
Yaroslav
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Grodno
Nowogrodek
Rogachev
Dnieper
Kaluga
Moscow
Oka
Murom
Arzamas
Volga
Riazan
Kuibyshev
Tula
Dankov
Lipetsk
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Ural
Saratov
Voronezh
BYELORUSSIA
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Bug
Gomel
Desna
Pripet
Włodzimierz
VOLHYNIA
Kiev
Don
Stalingrad
Lwow
Cherkassy
Southern Bug
Dniester
Vinnitsa
Kamenets Podolskii
Uman
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POLIA
Pervomaisk
Nikopol
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Kishinev
Melitopol
Molochna
SEA OF AZOV
Kabarda
Koban
CRIMEA
Yayla Mts.
Terek
CASPIAN SEA
ROUMANIA
Sochi
Adler
Caucasus
Akhaltsikhe
ABKHASIA
BLACK SEA
Tbilisi
GEORGIA
TRANSCAUCASIA
Kura
Araxes
AZERBAIJAN
Nakhichevan

Map I

The Neolithic of the U.S.S.R.

(A Guide to the Recent Literature on the Subject)*

by T. Sulimirski

Ten years, or so, have passed since the appearance of a series of publications of a general character on East European archaeology, or dealing with a particular area, or devoted to a special period of the prehistoric past of the country. Mention may be made here to the *Archaeology of the U.S.S.R.* by A. I. Mongait, originally published in Russian in 1955, the English translation of which appeared in 1961 (Penguin Books); *Osnovy Arkheologii* (*Foundations of Archaeology*) by A. V. Artisikhovskii (2nd edition, Moscow, 1955); *Narysy Starodavnoi Istorii Ukrainskoi R.S.R.* (*Essays on Ancient History of the Ukrainian SSR* (In Ukrainian), Kiev, 1957); *Arkheologichni Doslidzhennya na Ukraini*

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* In this article the following are the chief abbreviations used:

AE:	*Arkheologiya i Estestvenye Nauki*, Moscow, 1965.
AF:	*Issledovaniya po Arkheologii SSSR* (Artamonov Festschrift), Leningrad, 1961.
AK:	*Arkheologiya*, Kiev (in Ukrainian, mostly with a short summary in Russian).
AP:	*Arkheologichni Pamyatky USSR*, Kiev (in Ukrainian mostly with a short summary in Russian).
ASE:	*Arkheologicheskii Sbornik*, Hermitage, Leningrad.
GIM:	*Trudy Gosudarsvennogo Istoricheskogo Muzeya*, Moscow.
Hamburg Congress:	*Bericht über den V. Internationalen Kongress für Vor- und Frügheschichte, Hamburg 1958*, Berlin, 1961.
KSAMO:	*Kratkie Soobshcheniya Arkheologicheskogo Muzeya*, Odessa.
KSIAK:	*Kratkie Soobshcheniya Instituta Arkheologii*, Kiev.
KSIAM:	*Kratkie Soobshcheniya Instituta Arkheologii AN SSSR*, Moscow.
KSIIMK:	*Kratkie Soobshcheniya Instituta Materialnoy Kultury*, Moscow.
MDAPV:	*Materialy i Doslizhdennya z Arkheologii Prykarpattya i Volyni*, Kiev (in Ukrainian, mostly with a short summary in Russian).
MIA:	*Materialy i Issledovaniya po Arkheologii SSSR*, Moscow-Leningrad.
NSA:	*Novoe v Sovetskoi Arkheologii*, Moscow, 1965.
PPS:	*Proceedings of the Prehistoric Society*, Cambridge.
Rapports:	*Les Rapports et les Informations des Archeologues de l'URSS VI Congrès International des Sciences Préhistoriques et Protohistoriques*, Moscow, 1962 (mostly in French: some articles in English).
SA:	*Sovetskaya Arkheologiya*, Moscow.
SE:	*Sovetskaya Etnografiya*, Moscow.
SVOD:	*Svod Arkheologicheskikh Istochnikov. Arkheologiya SSSR*, Moscow-Leningrad.
Symposium:	*L'Europe à la fin de l'âge de la pierre*, Praha, 1961 (mostly in French; some articles in English or German).
WZH:	*Wissenschaftliche Zeitschrift der Martin-Luther Universität*, Halle.

1917–1957 (*Archaeological Research in the Ukraine* (in Ukrainian) Kiev, 1957) by I. H. Shovkoplyas; *Ocherki po Istorii Plemen Evropeyskoy Chasti SSSR v Neoliticheskuyu Epokhu* (*Essays in the History of the Tribes of the European Part of the USSR in the Neolithic*, Moscow, 1952) by A. Ia. Briusov—the revised German edition of this book appeared in Berlin in 1957; *The Prehistory of Eastern Europe*, Part I, by M. Gimbutas (Cambridge Mass., 1956).

In the meantime new and important investigations, some on a large scale, have been conducted and results of many published. Many valuable contributions on East European archaeology have appeared also outside the Soviet Union written by both Soviet and other scholars. The very large literature published makes extremely difficult the task of being properly informed on the current position of research on various problems, themes, periods, cultures, etc. in the U.S.S.R. as a whole, or even of its particular regions only. Of great assistance in this respect is the list of all authors, and a classified list of all articles published in Nos. 51–100 (1953–1965) of the *KSIIMK* and subsequently the *KSIAM* (*KSIAM* 100, 1965, p. 144–197).

I have been encouraged by Professor W. F. Grimes to write a series of reports, a kind of guide, on the more important books and articles on the archaeology of the USSR which have appeared during the last ten years, approximately from 1957 to 1966. In this first report, I propose to concentrate on the important literature relating to the Neolithic of the USSR. Of necessity, account has been taken only of books, pamphlets and periodicals available in London. I hope, however, that in spite of its incompleteness, the review will serve its purpose.

The term 'Neolithic' has a very wide meaning in Eastern Europe. The great differences in the climate and in natural conditions within that very huge territory were responsible for considerable retardments in some areas where cultures of the 'Neolithic' type survived even as late as the first millennium B.C. This is why the cultural meaning of the term 'Neolithic' has been disregarded here, and only its chronological notion considered; accordingly, the literature dealt with relates mainly to the fourth and third millennia B.C.

Publications of a general character

The only book of a general character on the prehistoric past of the USSR published during the period under review, seems to be the *Drevnosti Nashey Zemli* (*Antiquities of Our Country*, Moscow, 1961, Academy of the USSR) by N. Ia Merpert and D. S. Shelov. This book of 240 pages, of a popular character which is not available here, has been very favourably reviewed by A. P. Smirnov (SA, 1962(1), pp. 311–315). A review of the achievements of Soviet archaeology in 1959–1960 has been given by S. V. Kiselev (*KSIAM* 88 (1962), pp. 3–9); the

same author published also (*NSA*. pp. 17–60) a brief review of the cultures of the third and second millennia B.C. within the whole territory of the USSR in Europe and Asia and also of the main problems involved in these.

A number of articles dealing with various topics of a more general character are worthy of mention. Among them are papers by A. A. Formozov devoted to the problems of the transition from the Mesolithic to the Neolithic in the *USSR* in Europe (*SA*, 1957(1), pp. 13 ff.; *SE*, 1958(5), pp. 17–30; *Prace I Materialy Muzeum Archeologicznego I Etnograficznego*, 5 (Lôdz, 1960), pp. 5–25 (in Polish with a summary in French), and in Asia (*SA*, 1959(2), pp. 47–59), all provided with sketch maps. The same theme was discussed by D. A. Kraynov and A. Ia. Briusov (*Materialy Po Izucheniyu Chetvertichnogo Perioda*, 1 (1961). A book by R. Indreko, *Mesolitische und frühneolitische Kulturen in Osteuropa und Westsibirien* (Stockholm, 1964, Kungl. Vitterhets Historie och Antikvitets Akademiens Handlingar) is likewise devoted to these topics. Connections of the North-Pontic countries with the Balkans during the third millennium B.C. have been debated by N. Ia. Merpert (*KSIAM* 105 (1965), pp. 10–20).

A review of the earlier literature, up to about 1940, concerned with various topics of the Neolithic of the country on the Lower Dnieper has been given by M. A. Miller in his work *Pervobytnyi Period V Istorii Nizhnego Dnepra* (*The Primitive Period in the History of the Country on the Lower Dnieper*, Munich, 1965, Institute for the Study of the USSR, mimeographed, pp. 70–161). A similar review of the Neolithic and the Early Bronze Age of the country on the lower Don and north of the Sea of Azov by the same author, *Don I Priazovie V Drevnosti* (*The Don and the Country on the Sea of Azov in Antiquity*, Munich, 1958, published by the Institute as above, mimeographed), provides several reports on hitherto unpublished pre-war investigations in the area.

Climatic conditions during the Neolithic in the Ukraine are the theme of articles by D. Ia. Telegin (*AK* XIV (1962), pp. 76–81) and myself (*Archaeologia* XII (Warszawa, 1961), pp. 1–18 in English). Contributions by A. Häusler (*WZH* VIII (1959), pp. 775–792) and by Iu. Krasnov (*SA* 1965(2), pp. 57–74) are devoted to questions concerned with the earliest agriculture and husbandry in Eastern Europe. Questions relating to the domestication of animals in the south of the USSR have been discussed by D. A. Kraynov (*MIA* 91 (1960) and A. D. Stolyar (*SA* 1959(3), pp. 3–18), who is interested especially in the domestication of pigs in the Crimea. S. N. Bibikov (*SA* 1963(4), pp. 27 ff.) deals with the development of flint sickles, and V. S. Titov (*KSIAM* 88 (1962), pp. 10–25) with the social development of the earliest agriculturalists.

B. A. Rybakov, in his two articles (*SA* 1965(1), pp. 24–46; 1965(2), pp. 13–33), discusses the cosmogony and mythology of the early farmers in Eastern Europe, especially of those of the Tripolye culture. The various forms of the

burial ritual of the Neolithic and the Early Bronze Age in Eastern Europe are the theme of a contribution by A. Häusler (*WZH* 11 (1962), p. 1141–1183), and G. Debetz discloses the results of his recent studies relating to the palaeo-anthropology of Northern Eurasia (*Rapports*, in French).

The number of Carbon 14 dates for the East European Neolithic, published so far, is very insufficient. Some were given by V. V. Artemiev, S. V. Butomo, V. M. Drozhzhin and E. N. Romanova (*SA* 1961(2), pp. 3 ff.) and more of these appeared in a special publication, *Absolutnaya Geokhronologiya Chetvertichnogo Perioda* (*The Absolute Chronology of the Quaternary Period*, Moscow, 1963, p. 137–153). Recently new dates relating especially to Estonia have been published by A. A. Liiva, E. O. Ilves and L. I. Jaanits (*AE* pp. 46–50). Most of the dates have been published again in Western periodicals, e.g. by Chester S. Chard (*Arctic Anthropology* 1 (1962), pp. 84 ff.).

The results of spectroscopic and chemical analyses of metal objects (copper and bronze) of the third and second millennia B.C. were given by I. R. Selimkhanov (*SA* 1962(1), pp. 57–65; *PPS* 28 (1962), pp. 68–79, and 30 (1964), pp. 66–74), and by E. N. Chernykh (*AE* pp. 96–110). The latter article is provided with a chronological diagram and maps showing the diffusion of products of different metallurgical centres in Eastern Europe in subsequent periods during the third and second millennia B.C. The results of the metallographic analysis of the copper hoard from Corbuna in Bessarabia, of the early Tripolye culture, were discussed together with the problems involved by N. V. Ryndina (*AE* pp. 119–128).

The South-West

The main problems concerning the early agricultural cultures of the Ukraine, and also the question of their origin, have been summarized by V. N. Danilenko (*KSIAK* 9 (1959), pp. 3–9). A short review of the position in the Ukraine of these cultures, and the outlines of the neolithic chronology, have been given by T. S. Passek in her recent papers (*Symposium* pp. 148–160; *Rapports;* both in French; *KSIAM* 105 (1965), pp. 3–9) and also by M. Gimbutas, who discusses the development, reciprocal relations and relative chronology of these and their correlation with the Balkan cultures of the Neolithic and Chalcolithic (*Chronologies in Old World Archaeology* (ed. R. W. Ehrich), Chicago–London (1965), pp. 459 ff.)

The transition from the Mesolithic to the Neolithic in the region of the Dnieper rapids has been discussed by A. D. Stolyar (*AF* pp. 34–46). It does not seem that he is right in considering all the earlier flat cemeteries of that region, with the skeletons in a contracted position, to be exclusively of the mesolithic age. The cemeteries, one of which has been published by him (*ASE* 1 (1959,

pp. 78–165), and another by D. Ia. Telegin (*AK* 13 (1961), pp. 3–19), were undoubtedly in use during the Early Neolithic; as mentioned by A. D. Stolyar in the latter publication (p. 156), bones of domesticated animals have been found in at least two graves of the 'mesolithic' cemetery III of Vasilevka. They were replaced by cemeteries of the Middle Neolithic, which exhibit a different burial ritual, and the people in them belonged to a different racial type, which has been established by anthropological study of the cranial material.

The Danubian I culture

New investigations in West Podalia and Bessarabia (the Moldavian Soviet Republic) brought to light a series of sites of the Danubian I, or the Linear Band Pottery culture. A few preliminary reports on these excavations have been published by T. S. Passek and E. K. Chernysh in the *SA*, *KSIIMK*, *KSIAM* and *KSIAK*, but recently two important publications by these authors appeared on the subject. One of these, by E. K. Chernysh (*MIA* 102 (1962), pp. 6–85) brings a full report on excavation of the important stratified site at Nezvyska (Nezvisko in Russian) on the Dniester in West Podolia. In its lowest occupation layer, dwellings and a burial of the Danubian I culture have been uncovered, superimposed by remains of the Tripolye culture. The chronological position of the Danubian I remains of the site and some problems connected with these have been discussed by the author, who dated them to the middle stage of the culture, according to the scheme by B. Soudsky.

The other publication, by T. S. Passek and E. K. Chernysh, *Pamiatniki Kultury Lineyno-Lentochnoy Na Territorii SSSR* (*Relics of the Linear Band Culture of the Territory of the USSR*, *SVOD*, b–1–11 (1963)), contains 25 figures in the text, including two maps, and 26 plates. All sites of the culture, known then, have been listed, described and mapped but recently new sites have been discovered in Bessarabia, south of Kishinev (V. I. Markevich, *KSAMO for 1962* (1964)), p. 92, map on p. 86). The chronological position of the Danubian culture within the USSR has been discussed by the two authors mentioned above. Stratigraphic evidence shows that it was subsequent to the Criş Körös culture in Roumania; at Baskiv Ostriv on the Southern Bug, Danubian I potsherds were found in the layers of the second stage of the Southern Bug culture. The authors conclude that the eastern remains of Danubian I type were of the fourth millennium B.C. and equated with Tripolyan period A.

The Tripolye culture

Publication of the results of recent excavations of Tripolyan settlements relate mainly to sites in West Podolia and Bessarabia (the Soviet Moldavian Republic). The most important of these is the work *Rannezemledelcheskie*

(*Tripolskie*) *Plemena Podnestrovia* (*The Early Agricultural* (*Tripolyan*) *Tribes of the Country on the Dniester*, *MIA* 84 (1961), 203 pages) by T. S. Passek. This is a book complementary to that published by the same author in 1949 (*MIA* 10) in which the chronology of the Tripolye culture has been established. In the new work, a list and short descriptions of all sites in Podolia and Bessarabia are given, arranged according to their division into the subsequent periods of the Tripolyan development. Included are also full reports on the excavation of several newly investigated settlements. The work, like almost all volumes of the *MIA* series, is provided with no index, not even of the sites quoted and discussed, which is very regrettable and inexcusable; this greatly hampers the use of the book.

The most important is the description of the stratified site of Polivanov Yar near Kamenetz Podolskii on the southern side of the Dniester (pp. 105–139), in which three superimposed Tripolyan layers of periods B1, B2 and C have been uncovered. The site at Floreşti in Bessarabia (pp. 193–203), likewise yielded three occupation layers; the lowest one was of the Danubian I culture, over it lay remains of the Boian-Giuleşti type, and the upper layer was of Tripolyan A period. Another important report contains the description of the flat cemetery at Vykhvatyntsi on the Middle Dniester near Rybnitsa, on the border of the steppe and forest-steppe (pp. 146–182). The burial ritual of the cemetery exhibits features characteristic of graves of the Yamnaya period in the valley of the lower Dnieper on the one hand, and of the Central European Corded Ware (Battle-Axe) culture on the other.

The volume is supplemented by two small contributions. N. V. Ryndina (pp. 204–209) deals with the technology of the Tripolyan metal objects, and M. S. Velikanova (pp. 210–226) sets out the results of the anthropological study of the osseous (especially cranial) material from the cemetery at Vykhvatyntsi. The people buried there were of the dolicho-cephalic, Mediterranean type.

Full reports on the excavation of a number of Tripolyan sites appeared in special publications and in various periodicals. At Nezvyska, on the Dniester, the site already mentioned, and published by E. K. Chernysh (*MIA* 102 (1962), pp. 5–85), two Tripolyan layers (periods B1 and B2) lay over the remains of the Danubian I culture; a Tripolyan burial of period B2 was uncovered (pp. 26–58, 66–85). Another stratified site, at Pechora on the Southern Bug south of Vinnitsa, published by the same author (*ASE* 1 (1959), pp. 166–201), had two occupation layers, the lower one of Tripolyan period A, the upper one of period C2. A map (p. 200) shows the position of all Tripolyan sites in the area between Vinnitsa and Uman, their respective age being indicated. A paperback by the same author, *Rannotrypillske Poselennya Lenkivtsi Na Seredniomu Dnistri* (*The Early Tripolyan Settlement at Lenkivtsi on the Middle Dniester*,

Kiev, 1959, 107 pp., in Ukranian) contains a report on the excavation of the site mentioned in the title, situated in the region of Kamenetz Podolskii. Finally, T. G. Movsha (*SA* 1961(2), pp. 186–199) gives the account of the excavation of Soloncheny II on the Middle Dniester, and discusses its relationship with the cultures of the Dnieper rapids region of Seredni Stog II type. In this site, dated by the author as Tripolyan period B2 and C1, a few potsherds were found typical of the Globular Amphora culture.

A child's sacrifice has been uncovered under the floor of a Tripolyan hut of period A at Luka-Ustinskaya on the Dniester (T. D. Belanovskaya, *FA* pp. 56–68). A sacrificial cremation burial which was uncovered in the late Tripolyan settlement at Tsviklivtsi, likewise near Kamenetz Podolskii, was described by T. G. Movsha (*AK* 16 (1964), pp. 213–222), who also quoted other burials of this type.

A few copper hoards, important for dating purposes, came to light within the Tripolyan territory. The earliest of these and the largest one, published by G. P. Sergeev (*SA* 1963(1), pp. 135–151), was found in a Tripolyan A vase at Corbuna near Kishinev in Bessarabia. It consisted of nearly 450 wrought copper objects, two stone battle-axes, and about 300 ornaments of bone, stone, Spondylus shells and animal teeth. Another copper hoard, found in a Tripolyan vessel of period B1 at Horodnica on the Dniester, was published by myself (*Mitteilungen d. Anthropologischen Gesellschaft, Wien*, 91 (1961), pp. 91–97, in English), and a late Tripolyan C2 hoard from Tsviklivtsi, the site mentioned above, was dealt with by T. G. Movsha (*AK* 18 (1965), pp. 161–170).

A series of articles has been concerned with various aspects of the Tripolye culture. S. N. Bibikov (*SA* 1965(1), pp. 48–62) discussed the economic basis of the Tripolyan culture and the supposed density of population during periods B2 and C1 in the area on the Middle Dnieper south of Kiev. According to his estimate, about nineteen people lived there at that time on one square kilometre. A few contributions are devoted to the analysis and the study of the meaning of the decorative motifs of the Tripolyan ornament, and also of the clay figurines, e.g. that of O. V. Tsvek (*AK* 16 (1964), pp. 76–81), or by T. G. Movsha (*AK* 19 (1965), pp. 100–105).

The reciprocal relations between the Tripolye culture and the neolithic settlements of the valley of the lower Dnieper have been discussed by T. G. Movsha (*SA* 1961(2), pp. 186 ff.); however, her equations are disputable. The evidence offered by the newly investigated stratified sites calls for a further revision of the chronological scheme established by T. S. Passek. This relates especially to the establishment and proper correlation of stages in the development of the several regional groups of the culture, the evolution of which had not proceeded at the same pace everywhere. These topics have been discussed in my article (*PPS* 30 (1964), pp. 56–65).

The Gumelnita culture

Six settlements of the Roumanian Gumelnita culture (Aldeni II type) have been discovered in the southernmost part of Bessarabia north of the Danube. In one of these, at Bolgrad, a child's burial was uncovered under a stone cover. The sites have been described by E. K. Chernysh (*KSAMO* for 1962 (1964), pp. 24–30) and by T. S. Passek and E. K. Chernysh (*KSIAM* 100 (1965), pp. 6–18); the latter publication is provided with a map showing the diffusion of the sites. They have been equated with Tripolyan period B1 (Cucuteni A).

Relations with Central European cultures

The Tripolye culture bordered to the north-west on the Central European Funnel Beaker culture. Reports on excavation of two of the easternmost sites of the latter culture, one near Wlodzimierz in Volhynia, the other near Lwow (Lvov), have been published by M. Iu. Smishko and M. A. Peleshchyshyn (*MDAPV* 4 (1962), pp. 28–41), and by M. A. Peleschchyshyn (*MDAPV* 5 (1964), pp. 18–27). The chronology of the reciprocal connections between the Tripolye and the Funnel Beaker cultures, and the relative position of other neolithic cultures of the region established on the stratigraphic evidence, have been discussed by Iu. M. Zakharuk in a series of articles (*MDAPV* 2 (1959), pp. 54–72; 3 (1961), pp. 22–41; *KSIAK* 12 (1962), pp. 48–52).

The Globular Amphora and Corded Ware cultures in West Podolia and West Volhynia have been dealt with by I. K. Sveshnikov in a pamphlet *Megalitychni Pokhovannya Na Zahidnomu Podilli* (*Megalithic Burials in West Podolia*, Lviv, 1957, 31 pages with a map; in Ukrainian), and in his smaller contributions (*KSIAM* 85 (1961), pp. 55–65; 97 (1964), pp. 127–134; *MDAPV* 4 (1962), pp. 44–53). In another pamphlet, *Pidsumky Doslidzhennya Kultur Bronzovoi Doby Prykarpattya I Zahidnoho Podilla* (*Summary of Investigation of the Bronze Age Cultures of the Subcarpathian Area and West Podolia*, Lviv, 1958, 29 pages; in Ukrainian) and in its shorter version in Russian, *Pamyatniki Plemen Bronzovogo Veka Prikarpatya I Zapadnoi Podolii* (*Remains of the Bronze Age Tribes of the Subcarpathian Area and West Podolia*, Moscow, 1959, 16 pages), the same author discusses wider problems relating to the late neolithic cultures of the region and to their Bronze Age successors.

The Corded Ware (Battle-axe) and Globular Amphora cultures appeared in Eastern Europe by the very end of the third millennium B.C. Questions connected with their origin and their entering into our territory are the only ones which lie within the scope of the present review. These topics have been discussed in many of the publications mentioned in the Introduction, and also in special articles. One of these was by A. Ia. Briusov (*SA* 1961(3), pp. 14–33) who in this connection discusses also the Indo-European problem (*SA* 1958(3), pp.

18–26; *Rapports*, in French); he is of the opinion that the Indo-Europeans were the aboriginal population of Europe, and that the disintegration of their original unity was completed already during the Mesolithic and the Early Neolithic, in the fifth and fourth millennia. The problem has been likewise discussed by N. Ia. Merpert (*KSIAM* 83 (1961), pp. 3–8).

The Comb-Pricked Ware culture

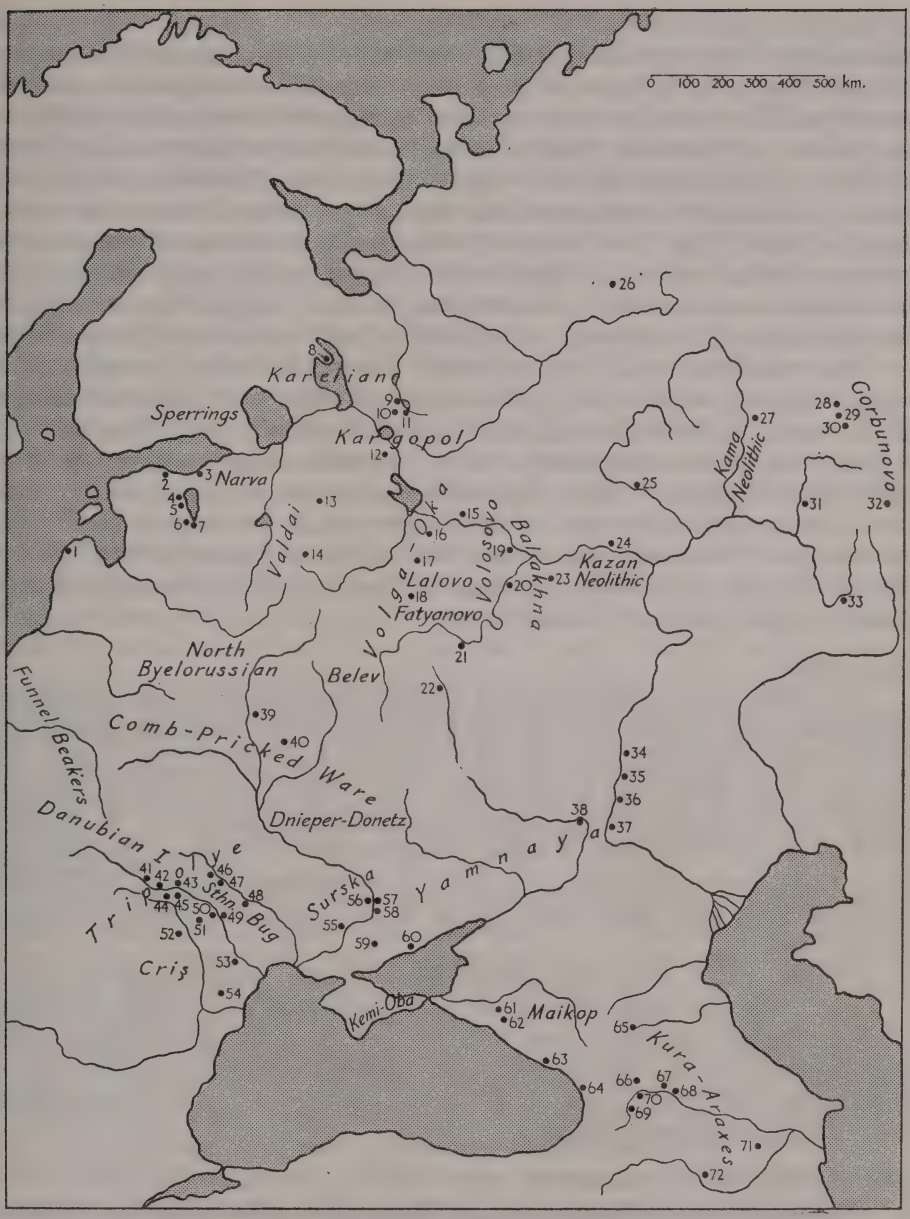
Several neolithic sites have been investigated in the northern and north-eastern parts of the Ukraine, within the forest-steppe zone east of the Dnieper, and in the forest zone west of the river. They belong to the culture called the 'Comb-Pricked Ware culture' by D. Ia. Telegin (*AK* 11 (1957), pp. 70–88), and recently renamed by him the 'Dnieper-Donetz culture' (*SA* 1961(4), pp. 26–40). According to this author (*MIA* 79 (1960), pp. 182–187), the culture extended over the forest-steppe zone of the Ukraine eastwards up to the Donetz, and west of the Dnieper over Volhynia and Byelorussia, over the basin of the upper Dnieper reaching northwards up to the Niemen. Similar pottery was likewise found further west, in Poland, where the name of the Masovian, or the Dnieper-Elbe culture has been given to these remains. They were formerly wrongly considered as forming the western branch of the Pit-comb Ware culture of Central Russia. This was the earliest neolithic culture of the area, although the economy of its bearers was based still on hunting and fishing. Its initial date has been discussed by Telegin (*SA* 1962(4), pp. 27–36), according to whom it goes back to the fourth millennium B.C.

The Dnieper-Donetz culture in the south

According to the stratigraphic evidence of a number of sites investigated by D. Ia. Telegin on the middle Donetz (*SA* 29–30 (1959), pp. 159–171), there were three occupation layers established there. The lowest of these was in fact mesolithic, with no pottery. The next one was of the Dnieper-Donetz culture, and the upper layer yielded pottery characteristic of the Central Russian Pit-comb Ware culture. The appearance of the latter has been interpreted by Telegin as witnessing the seizure of the country on the Donetz by northern newcomers. The bearers of the Dnieper-Donetz culture were forced to retreat southwards into the region of the Dnieper rapids, and ultimately reached the coast of the Sea of Azov. In these areas, they superseded the local Surska culture of the Early Neolithic, and initiated the new period, the Middle Neolithic.

Over twenty cemeteries and several settlements of the Dnieper-Donetz culture have been recorded in the area between the Dnieper and the Donetz down to the Sea of Azov, most of which were investigated and the results published by D. Ia. Telegin (*KSIAK* 9 (1959), pp. 10–20; 12 (1962), pp. 13–17;

1 Sārnate
2 Kunda
3 Narva
4 Akali
5 Kullamägi
6 Tamula
7 Villa
8 Oleni Ostrov
9 Karavaikha
10 Modlona
11 Pogostishche
12 Vaskin Bor
13 Lake Piros
14 Shcheposhnik and Kochishche
15 Boran
16 Seltso
17 Sakhtysh
18 Lialovo
19 Balakhna
20 Volosovo
21 Riazan
22 Dolgoe
23 Sakony
24 Observatoria and Zaymishche
25 Bui
26 Vis
27 Ust-Chusovaya
28 Poludenka
29 Yazevskaya
30 Gorbunovo
31 Ust-Yurezan
32 Chebarkul
33 Akbuta
34 Skatovka
35 Berezhnovka
36 Bykovo
37 Kalinovka
38 Khutor Repin
39 Khodovichi
40 Romanovichi
41 Nezvyska
42 Lentivtsi
43 Tsviklivtsi
44 Luka Ustinskaya
45 Polivanov Yar
46 Pechora
47 Bashkiv Ostriv
48 Savran
49 Vykhvatyntsi
50 Soloncheni
51 Floresti
52 Hăbăşeşti (Roumania)
53 Corbuna
54 Bolgrad
55 Mykhailivka
56 Mykilske
57 Vilnyi
58 Vasilevka
59 Akkermen and Melitopol
60 Mariupol
61 Maikop
62 Novosvobodnaya
63 Kistrik
64 Machara
65 Dolinskoe
67 Kvatskhelebi
68 Gori
69 Almiranis Gora
71 Uch-Tepe
72 Kyul-Tepe



Map II
(for numbered sites see list opposite)

AP 10 (1961), pp. 194–196; *AK* 16 (1964), pp. 144–171), and by A. V. Bodyanskii (*KSIAK* 11 (1961), pp. 32–37). The cemetery of Mariupol, published nearly forty years ago, also belonged to the culture. Cemeteries with graves in trenches, were in use for several generations. Overlapping and superimposed burials of the cemetery at Mykilske (Nikolskoe in Russian) excavated by D. Ia. Telegin (*KSIAK* 11 (1961), pp. 20–31), and at Vilnyi near Zaporozhe enabled this author to distinguish three periods in the development of the culture in that area (*SA* 1966(1), pp. 3–13, with two maps and a chronological diagram). He proposes the turn of the fifth and fourth millennia as the approximate date of the formation of the culture; the evidence produced suggests the third millennium for its development in the region of the Dnieper rapids and further south.

Anthropological study of the osseous material from the cemeteries of the Dnieper-Donetz culture by G. F. Debets (*SA* 1966(1), pp. 14–22) shows that the people buried in these belonged to a heavily built type (men 170 cm. tall) with a large, heavy, wide-faced head, of the so-called Cro-Magnon type. They positively differed from their 'mesolithic' predecessors in the valley of the lower Dnieper and of the region of the Dnieper rapids, who were of the Mediterranean type. They must have come from the country situated further north, although they do not exhibit any Mongoloid features; in this they differ from the Pit-comb Ware people of Central Russia.

The Crimea

A number of brief descriptions of newly discovered sites in the Crimea were published during the period under review. It has been established already, and emphasized again, e.g. by Iu. G. Kolosov (*KSIAK* 7 (1957), pp. 13 ff.), that remains of the 'mesolithic Tardenoisian type' in the Crimea were for the most part of neolithic age. These topics have been discussed by D. A. Kraynov (*MIA* 91 (1960), 190 pages). A rather critical review of this work was published by Iu. G. Kolosov (*SA* 1963(3), pp. 257–265). Questions relating to the Crimean Neolithic have been dealt with also by A. A. Formozov (*MIA* 102 (1962), pp. 81–149).

Of a later date (late third millennium B.C.) were Yamnaya barrow-graves, in which about 200 burials have been uncovered. They were found all over the Crimean steppe, whereas graves and settlements of the Kemi-Koba culture kept to the Crimean foothills and to the south-western coastal area (A. A. Shchepinskii, *SA* 1962(3), pp. 38–47; 1966(2), pp. 24–32, with a map showing the distribution of these remains).

The Yamnaya (Pit-grave) culture

Investigations of barrow-graves concentrated in a few regions in the steppe and forest-steppe zone, being carried out in conjunction with large civil engineer-

ing works, the construction of canals, water reservoirs, etc. Many barrow-graves were of the Yamnaya (Pit-grave) culture, the earliest one in the steppe, burials of which were under mounds.

About thirty barrows situated in several sites in the area of Nikopol and Apostolovo on the lower Dnieper yielded typical Yamnaya burials. A local feature of these was the covering of the grave-shaft with a stone slab, or raising a small cairn, and encircling the grave with large stones, which appeared in a later stage, transitional to the Catacomb period, at the turn of the third – second millennia B.C. Several reports on these excavations were published, mainly in Ukrainian, in *AP* 9 (1960), by D. T. Berezovets, A. I. Furmanska, V. A. Illinska, I. P. Kostiuchenko, H. T. Kovpanenko, E. V. Makhno, E. O. Petrovska and E. F. Pokrovska; and also in *AP* 10 (1961) by D. T. Berezovets and D. I. Blifeld. A report has likewise been published by O. A. Krivtsova-Grakova (*MIA* 115 (1962), pp. 5–55). S. S. Berezanskaya (*KSIAK* 9 (1959), pp. 56 ff.) gave an account of her excavation of a few barrow-graves with primary burials of the Yamnaya culture, situated on the steppe and forest-steppe border near Cherkassy.

Flat graves grouped in small cemeteries were uncovered in five sites on the lower Dnieper and published by D. Rybalova (*AP* 9 (1960), pp. 5 ff.), O. G. Shaposhnikova (*AP* 10 (1961), pp. 3 ff.) and by M. I. Vyazmitina (*AP* 10 (1961), pp. 64 ff.), all in Ukrainian. Most burials were under a ' stone cover ' (a small cairn), some were encircled by large stones (' cromlechs '), and did not differ from similar graves of the region of the Dnieper rapids, which were for the most part of a later date. In the latter area, a group of neolithic graves of this type have been recently investigated by A. V. Bodyanskii (*SA* 1964(1), pp. 291 ff.); in one of these an anthropomorphic stela lay over the grave. Similar stone constructions have been recorded in the Tripolyan cemetery at Vykhvatyntsi, mentioned previously.

A few flat graves with similar stone constructions belonged to the important stratified settlement of Mykhailivka (Mikhailovka in Russian) on the lower Dnieper. Several preliminary reports on the investigation of this settlement were previously published, and some appeared during the period under review (*KSIAK* 9 (1959), pp. 21 ff; 11 (1961), pp. 38 ff.). Recently a full report on these was published by the same authors, O. F. Lahodovska, O. G. Shaposhnikova and M. L. Makarevych in the book *Mykhailivske Poselennya* (*The Settlement of Mykhailivka*, Kiev, 1962, 247 pages; in Ukrainian). Three superimposed layers of occupation have been uncovered there; the two lower ones have been considered as pre-Yamnaya, and the upper one as of the Yamnaya culture. However, a closer scrutiny of the material shows that the lowest layer must be equated with the Yamnaya culture and dates to the late third millennium B.C.;

the two upper layers show connections with the Central European Corded Ware (Battle-axe) culture on the one hand, and with the Catacomb culture on the other. The upper layer was evidently of the second millennium B.C.

The steppe country east of the Dnieper, on the Molochna near Melitpol, was another area within which 83 barrow-graves with 434 burials, situated in several sites, were excavated. The burials ranged from the Yamnaya period to the Middle Ages. Full reports on these investigations were published by A. I. Furmanska, V. A. Illinska, L. S. Klein, H. T. Kovpanenko, E. F. Pokrovska, K. F. Smirnov, O. I. Terenozhkin and M. I. Vyazmitina (*AP* 8 (1960), 192 pages). The earliest Yamnaya burials, which were exclusively the primary ones, were in shafts and were either unfurnished or very poorly endowed. The Yamnaya secondary burials were mainly on the ancient ground surface. Some graves were encircled by stones, and some had an anthropomorphic stela. In two mounds at Akkermen, remains of wooden carts have been uncovered (A. I. Terenozhkin, *KSIIMK* 63 (1956), pp. 70–75).

A very brief review of Yamnaya barrow-graves on the steppe border further north, on the upper Donetz, has been given by E. V. Puzakov (*Materialy po Arkheologii Severnogo Prichernomoria*, 4, Odessa (1962), p. 194 ff.), who also published a map showing the diffusion of these remains. The newly investigated Yamnaya barrow-graves in the Crimea have already been mentioned.

Of great importance for the study of the Yamnaya culture were investigations of several barrow-grave cemeteries in the steppe between Volgograd (Stalingrad) and Saratov on the lower Volga. Many of these (the earliest of all) were of the Yamnaya culture. The results were published by V. P. Shilov, I. V. Sinitsyn and K. F. Smirnov in *MIA* 60 (1959), pp. 38–523 and by I. V. Sinitsyn and K. F. Smirnov in *MIA* 78 (1960), pp. 10–268. Yamnaya barrow-graves found further north, along the middle Volga, have been published by N. Ia. Merpert (*MIA* 61 (1958), pp. 55 ff.), and a few investigated between the lower Don and the Manych, by A. N. Melentiev (*KSIAM* 103 (1965), pp. 53 ff).

The cranial material from the cemetery at Kalinovka, excavated by V. P. Shilov mentioned above, has been studied by V. V. Ginzburg (*MIA* 7 60 (1959), pp. 524–594). The results show that the Yamnaya population of the southern part of the steppe on the lower Volga, in the region of Stalingrad, was dolichocephalic, a variation of the Mediterranean type, and differed somewhat from that of the steppe further north, north of Saratov.

The Yamnaya culture has been supposed to have extended eastwards up to the river Ural and the South Ural mountains (K. F. Smirnov, *NSA*, pp. 156–159). However, B. A. Latynin (*SA* 1958(3), pp. 46–53) pointed out that the cemetery of Zaman-Baba I, situated on the south-western border of the oasis of Bukhara in the central part of Uzbekistan in Soviet Central Asia, may be con-

sidered as of the Yamnaya culture. The people buried there were evidently northern newcomers in that area.

The Yamnaya culture was one of the most important in Eastern Europe in the third millennium B.C. In spite of this, no special work but only short articles have been devoted, so far, to the culture as a whole. In one of these, I. V. Sinitsyn (*KSIAK* (1957), pp. 32 ff.) points to close connections which link Yamnaya burials of the region on the lower Volga with those on the lower Dnieper, and concludes that all these remains must have been left by a single racial (ethnic) group.

The origin of the Yamnaya culture and its further development have been discussed by N. Ia. Merpert (*Hamburg Congress*, pp. 535–539). He acknowledges the existence of regional differences in the remains of the Yamnaya culture within the huge area of its extent, from the Urals in the east, to the Dnieper in the west (*Symposium* pp. 176–192); he distinguishes four main groups of the culture and four periods in its development, with a fifth in some areas. He seeks the origin of the culture in the steppe on the lower Volga, and considers its bearers to have been one of the Indo-European group of peoples. The formation of the culture took place in about the middle of the third millennium B.C. Some modifications of this division, and especially of the chronology of the stages in the development of the culture, have been proposed by M. Gimbutas (*Symposium*, pp. 193–200); a map published by her illustrates the presumed western expansion of the culture.

The division of the Yamnaya development into the consecutive periods, proposed by Merpert, cannot be regarded as the final one. This relates to the later stages which have been established on the basis of the sequence of layers in the settlement of Mykhailivka. However, the settlement lay on the western fringe of the Yamnaya territory and cannot be, therefore, considered to represent the trends in the evolution of all groups of the culture some of which lay over 1,000 km. (over 600 miles) apart. Furthermore, only the lowest layer of the settlement was of the Yamnaya period; the two which lay over it, especially the upper one, were positively of the subsequent, Catacomb, period.

The Caucasus

A few publications of a more general character deserve mentioning. One of these, by T. A. Bunyatov, *Ocherki Azerbaydzanskoy Arkheologii* (*Essays on the Archaeology of Azerbaijan*, Baku (1960), 237 pages), is known here only thanks to its favourable review by R. M. Munchayev (*SA* 1963(3), pp. 253–256), in which also a summary is given of its contents. Another book, by E. I. Krupnov, *Drevnaya Istoria i Kultura Kabardy* (*Ancient History and Culture of Kabarda*, Moscow, 1957), likewise known here from its review by R. M.

Munchaev and V. N. Markovin (*SA* 1959(2), pp. 266–270), deals with the prehistoric past of a country in the central part of Northern Caucasus.

E. I. Krupnov, in his pamphlet *The Cultural Unity of Ancient Caucasus and the Caucasian Ethnic Unity* (Moscow, 1963, 13 pages (XXVI International Congress of Orientalists); the same text in a pamphlet in Russian, under the same title (Moscow, 1963, 13 pages)) claims a cultural unity of the whole Caucasian territory during the third millennium B.C., based on the homogeneity of its population which represented the ancient ' Caucasian language family ', the racial (anthropological) homogeneity of the whole Caucasian territory has also been underlined in this context. K. Kh. Kushnareva and T. N. Chubinishvili (*SA* 1963(3), pp. 10–24) point to the important role which Transcaucasia has played in propagation further north of the ancient culture. Close connections of Transcaucasian cultures of the early period with Iran, and then with Troy and Tepe Hissar and other ancient centres, have been emphasized. The results of important excavations of a series of sites in Transcaucasia have been briefly summarized by B. Piotrovskii (*Rapports*, in English).

The ancient metallurgy of the Caucasus has been discussed in a book in Georgian by O. M. Dzhaparidze (Tbilisi, 1955) dealing with the early stages of the ancient metallurgy of Georgia; the book is known here only thanks to its review by D. L. Koridze (*SA* 1959(2), pp. 262–266). The results of chemical and spectroscopic analyses of some copper objects of the 'aeneolithic' period from the Northern Caucasus and Azerbaijan, have been given by I. P. Selimkhanov (*SA* 1960(2), pp. 89–102); they have shown that native copper was in wide use in the Caucasus in the third millennium B.C.

Northern Caucasus and Abkhasia

Investigations of the Early Neolithic sites along the Black Sea coast have been conducted by a few scholars. A. A. Formozov (*MIA* 102 (1962), pp. 124–149) distinguishes two periods in the neolithic development in that area. The most characteristic feature of the earlier of these, transitional from the Mesolithic, was its microlithic flint industry, a survival from the Mesolithic; it was found in all sites attributed to this period, e.g. Kistrik, Odishi, etc. The culture was related to that of the Crimea, where similar conditions prevailed during the Neolithic. Close ties which linked the culture with Eastern Anatolia have also been emphasized by Formozov (*SA* 1963(3), pp. 8–20; and in his work *Kamennyi vek i eneolit Prikubanya* (*Stone Age and Aeneolithic of the Kuban Country*), Moscow, 1965, pp. 54–63); the book deals also with the Palaeolithic and Mesolithic of the North-West Caucasus.

A few sites of the second period of the Neolithic have been investigated in the region of Adler-Sochi, and also further south in Abkhasia. Agriculture had

been introduced into the country at that time and the microlithic flint industry disappeared entirely. Typical of the period were small adzes of 'Adler' type (A. A. Formozov, *KSIIMK* 67 (1957), pp. 138–141; 78 (1960), pp. 13–21; I. K. Nedolya, *KSIIMK* 67 (1957), pp. 142 ff.). The earlier period has been dated by Formozov as of the fifth millennium, and the second one considered to be of the fourth millennium B.C.

Several early neolithic sites with a microlithic flint industry have been investigated in Dagestan in the north-eastern part of the Caucasus, and the results published by V. G. Kotovich in his work *Kamennyi vek Dagestana* (*Stone Age of Dagestan*, Makhachkala (1964), pp. 184–223), which in its first part deals with the palaeolithic remains of that country.

An important settlement of this period was investigated by V. V. Vzhaniya at Machara in Abkhasia (*SA* 1966(1), pp. 113–126). It had three occupation layers the lowest of which was neolithic. Its pottery and stone implements equate it with the lowest (C1) stratum of the aeneolithic settlement at Kvatskhelebi in Georgia, discussed further below; the latter was of the first half of the third millennium. The lowest layer at Machara was typical of the second period of the Neolithic distinguished by Formozov. Vzhaniya does not agree, therefore, with the early date of the period, as proposed by the latter author, and considers the second period of the North-west Caucasian Neolithic to be of the third millennium B.C.

The Kyul-Tepe I culture

The most important site for the study of the spread of early agriculture northwards was that at Kyul-Tepe near Nakhichevan in western Azerbaijan. Reports on its excavation were published by O. A. Abibullaev (*MIA* 67 (1959), pp. 431–452; *SA* 1963(3), pp. 157–168), and A. A. Yessen emphasized its importance (*KSIAM* 93 (1963), pp. 3–14). The site had two occupation layers. The upper was of the Kura-Araxes culture; the lower layer, separated from the upper by a sterile intercalation, yielded pottery which shows close connections with that of the earliest agricultural sites of the central part of Iran. The name of the 'Kyul-Tepe I culture' has been given to these remains. The bearers of the culture were the earliest agriculturists in Transcaucasia, who were already acquainted with copper. The settlement must have been at latest of the fourth millennium B.C.; its upper layer with remains of the Kura-Araxes culture has been Carbon-14 dated at 2900 B.C. Several sites in Azerbaijan have been attributed to the Kyul-Tepe I culture.

The Kura-Araxes culture

Successive to the Kyul-Tepe I culture was the Kura-Araxes culture, several important sites of which have been investigated (Sh. Chuvinishvili, *The Earliest*

Culture of the Region between the Kura and the Araxes (Tbilisi, 1965), in Georgian with a summary in Russian, 21 figures, 10 plates). One of the most important was the settlement at Kvatskhelebi on the Kura in Georgia, west of the town Gori, investigated by A. I. Dzhavakhishvili and L. I. Glonti (*Urbnisi* I, Tbilisi (1962), 63 pages, 36 plates, in Georgian with a summary in Russian). It had three successive layers of occupation. The uppermost was late antique and early mediaeval. The next one, with three horizons of building construction, was of the Early Bronze Age (second half of the third millennium), and corresponded with the late burials of Sachkhere and the Early Bronze Age burials of Trialeti. The lowest layer, likewise with three building horizons, was of the first half of the third millennium B.C.; its Carbon-14 date was given as *c.* 2800 B.C. Another large settlement of the culture was that at Almiranis Gora near the town of Akhaltsikhe in Georgia, 976 m. above sea level, published by T. Chubinishviil (*Almiranis Gora; Materials on the Ancient History of Meshket-Javakheti*, Tbilisi (1963), 120 pages, 17 figures, 14 plates; in Georgian with a summary in Russian).

Investigations of the Kura-Araxes sites and their culture have been summarized by O. Dzhaparidze (*On the History of Georgian Tribes in the Aeneolithic and Early Bronze Ages*, Tbilisi (1963), 288 pages, 49 figures, 26 plates; in Georgian with summaries in English and Russian). The chronological diagram (p. 120) shows the North-west Caucasian parallels. The author emphasizes close connections of the culture with Anatolia, and distinguishes two periods in its development, each subdivided into three stages. They jointly covered the time from *c.* 3200 to *c.* 1900 B.C. The culture and its interconnections with other countries have been discussed in a few pamphlets by O. M. Dzhaparidze (*The Culture of Early Agricultural Tribes in the Territory of Georgia*, Moscow (1964), 13 pages (VIIth International Congress of Anthropological and Ethnological Sciences); a pamphlet in Russian under the same title and date, 9 pages; and *To the History of Georgian Tribes During the Early Stage of the Copper-Bronze Culture*, Tbilisi (1962), 49 pages, in Russian), and also in a pamphlet by T. N. Chubinishvili, *The Interconnections between the Caucasian* (*Kura-Araxes*) *and the Near-east Cultures of the Third Millennium B.C.*, Tbilisi (1964), 13 pages (VIIth International Congress of Anthropological Sciences).

A settlement of the Aeneolithic Age near Kirovakan in Armenia has been published by E. V. Khanzadyan (*SA* 1963(1), pp. 152–161).

Investigations by Russian archaeologists have shown that the Kura-Araxes culture had crossed the main Caucasian ridge, and its remains have been found in several sites in the central part of Northern Caucasus. A branch of the culture, which extended over that region, has been studied by R. M. Munchaev (*MIA* 100 (1961); *SA* 1962(3), pp. 176–198), who dated it to the second half of the third millennium B.C.

The Maikop culture

It has been established by several scholars, e.g. by E. I. Krupnov (*SA* 1964(1), pp. 26–43) that the Maikop culture of the North-west Caucasus, called after the famous 'royal' barrow-grave, was closely related to the Kura-Araxes culture of Transcaucasia; it bordered to the west on the North Caucasian branch of the latter. Two periods in the development of the Maikop culture have been distinguished. The earlier one has been dated by Krupnov as 2500–2400 B.C., and the second, represented by the 'royal' barrow-graves of Tsarskaya-Novosvobodnaya, as 2300–2100 B.C. However, the latter burials have been recently thoroughly studied by T. B. Popova (*Dolmeny Stanitsy Novosvobodnoy—Dolmens of the Stanitsa Novosvobodnaya GIM* 34, Moscow (1963), 47 pages, 23 plates), who established their date at the turn of the third and second millennia B.C.

Recently a special study has been devoted to the Maikop culture by H. H. Formozov in the work already referred to (*Kamennyi vek i eneolit Prikubanya* (*The Stone Age and Aeneolithic of the Kuban Country*, Moscow (1965), pp. 64–152) who dates it to *c.* 2500–2000 B.C.

Several early settlements in the North-west Caucasus have been attributed to the Maikop culture (including that at Dolinskoe) by A. A. Formozov (*KSIAM* 88 (1962), pp. 27 ff.), who also discussed the economy of the population. The settlements of the period further north, near Krasnodar, have been described by A. A. Formozov and A. D. Stolyar (*SA* 1960(2), pp. 103–114), and two distinct provinces with somewhat different stone implements distinguished by V. I. Markovin and R. M. Munchaev (*KSIAM* 84 (1961), pp. 19–29). A. A. Formozov (*KSIAM* 93 (1963), pp. 34 ff.) emphasizes close connections of the Maikop culture with the neolithic sites of the Black Sea coast, dealt with in one of the preceding sections, and also with the countries south of the Caucasus, Asia Minor in particular.

Byelorussia

New investigations in the forest zone of Eastern Europe resulted in the blank areas on maps of the North Russian Neolithic (see A. Ia. Bryusov, *Hamburg Congress*, p. 162; in English) beginning to disappear. We shall start our review of the respective publications with the western part of the country, and shall gradually proceed eastwards.

The Neolithic of Polesia has been recently dealt with by Iu. V. Kukharenko (*SVOD* b–1–18 (1962)). The sites, mainly on sand-dunes surrounded by lakes and bogs, were marked by a large number of small flint implements and pot-sherds which lay on the surface. The most common among the latter were sherds of a well baked, yellowish ware with a sparse decoration consisting of thin comb

impressions, round and rhomboid dimples, whipped-cord impressions, etc., typical of the Masovian, or Dnieper-Elbe culture. In the eastern part of Polesia, dealt with previously, were frequent sherds of pointed based vessels of the Comb-pricked ware culture; and those of the Funnel Beaker culture were found nearer to the western border of the country. By the end of the Neolithic, cord-decorated pottery appeared on many sites.

About sixty neolithic sites were investigated by N. N. Gurina (*MIA* 131 (1965), pp. 141–203) in the country further north, along the Niemen east of Grodno, and about 340 km. (nearly 200 miles) north-east of these on the Dvina near Polotsk. The author emphasizes that there was a well marked continuity of development between the Mesolithic and Neolithic. The economy of the early neolithic population was still based on fishing and hunting. During the early Neolithic, many tools of microlithic type, characteristic of the Mesolithic, were in further use alongside the new ones typical of the neolithic flint industry.

According to Gurina, the western part of Byelorussia, Lithuania and Eastern Poland, formed a single cultural province at that time. The cultural unity of this province was maintained also later, during the Bronze Age (second millennium B.C.).

The eastern boundary of the province above has not been established. Investigations by I. I. Artemenko (*KSIIMK* 78 (1960), pp. 34–42; *SA* 1963(2), pp. 32–35; *Pamyatniki Kamennogo i Bronzovogo Vekov Evrazii* (Moscow, 1963), pp. 70–87; *KSIAM* 97 (1964), pp. 120–126), and by other scholars in the basin of the Upper Dnieper and the Desna, seem to indicate that the early neolithic pottery of the same type as that above extended also over the southern part of Byelorussia. It is of interest to note that sherds typical of the Globular Amphora Culture have been found there (I. I. Artemenko, *KSIIMK* 84 (1961), pp. 63 ff., especially fig. 10: 12, 15, 17). Pottery found in a series of newly discovered settlements, e.g. at Khodovichi near Rogachev, and also sets of flint tools, suggest that there must have been two subsequent periods in the neolithic development of the country, although so far no stratigraphic evidence exists for these. Pottery of the earlier of these seems to have been very similar to that in the northern part of Byelorussia, described above; that of the later period, the Comb-pricked ware, was typical of the Ukraine east of the Dnieper and of Volhynia. It had not reached the northern part of Byelorussia. The date of the earlier stage has been estimated as the third millennium, and that of the second stage as the turn of the third and second millennia B.C.

Of interest is the site at Romanovichi on the Iput, east of the town Gomel, investigated by I. V. Gavrilova (*KSIAM* 97 (1964), pp. 113–119). Its pottery was a mixture of that typical of Northern Byelorussia and of two types of pottery of the Volga-Oka Neolithic. Somewhere there, east of the Sozh, seems to have been the point at which the frontiers of the three cultures of that part of the forest zone met.

The Valdai culture

Remains of a culture closely related to that of the northern part of Byelorussia have been discovered in the region of the Valdai Hills and the basin of the Upper Volga, north-west of Moscow. They fill in a considerable gap in the knowledge of the Central Russian Neolithic. According to N. N. Gurina (*SA* 1958(3), pp. 31–45), thirty-four neolithic settlements have been recorded in that area, some of which were excavated. The name 'Valdai culture' has been given to them.

Excavation of the site on Lake Piros by L. Ia. Krizhevskaya (*KSIIMK* 75 (1959), pp. 77–84), of Shchepochnik on Lake Selig by N. N. Gurina (*KSIAM* 82 (1961), pp. 150–157), and Kochishche nearby by I. V. Gavrilova (*KSIAM* 92 (1962), pp. 87–90), revealed that the bearers of the culture were engaged in fishing and hunting. They were evidently descendants from the local mesolithic population; their partly microlithic flint industry retained many mesolithic traditions. No polished flints or slate tools were found. Pottery had for the most part an organic admixture in its clay paste, but a slightly sand-gritted ware was also common. Vessels had a pointed base, and their decoration consisted of irregularly scattered nail impressions, dimples, thin comb impressions and incisions, etc. The pottery differed from that of the Central Russian Volga-Oka culture, and seems to have belonged to the assemblage proper to the northern part of Byelorussia and the adjoining areas. The flint industry links the culture with a wide region extending over the basin of the upper Volga, Upper Dnieper and the Desna, as shown by P. N. Tretiakov in the work quoted further below.

The culture has been dated by Gurina as of the second millennium B.C., which does not seem right. Its southern connections point to the third millennium, which does not preclude the survival of the culture deep into the second millennium.

The Volga-Oka Neolithic (*Pit-comb ware culture*)

Well over sixty new neolithic sites have been discovered and investigated in the central part of Russia proper, within the provinces (oblast) of Yaroslav and Ivanovo north-east of Moscow, in territory hitherto almost untouched by archaeological research. Many preliminary reports on these investigations appeared, e.g. in *KSIIMK* 75 (1959), by M. E. Foss (pp. 4 ff., 17 ff., 26 ff.), D. A. Krainov (pp. 63 ff.), N. N. Gurina (pp. 70 ff.), etc. Of special importance were a series of stratified sites which lay mainly on the shore of many lakes of the area, e.g. Seltso on Lake Nero, published by O. S. Gadzyatskaya (*KSIAM* 97 (1964), pp. 107–112), or Sakhtysh I published by O. S. Gadzyatskaya and D. A. Krainov (*KSIAM* 100 (1965), pp. 29–39). In the lower layer of the latter site, many flint and bone implements were found; harpoons and arrow-heads of

bone were of types common in early neolithic and mesolithic sites of northern Europe. The two other superimposed layers of occupation of the site were of the Late Neolithic (second millennium B.C.), and the Late Bronze Age respectively.

Similar sites were investigated further east, in the region of the town of Kostroma, situated north of the upper Volga. In some of these, e.g. at Boran, published by N. N. Gurina (*MIA* 79 (1960), pp. 188–238; see also P. N. Tretiakov, *SA* 1966 (1), pp. 263–265), the earliest occupation layer yielded pit-comb pottery of the Lialovo type, and pottery excavated in its superimposed layers was of the Volosovo and Fatyanovo types, of the second millennium B.C. The earliest layer of the site has been dated to the second half of the third millennium.

The implications of the results of these excavations have been discussed. D. A. Krainov (*KSIAM* 97 (1964), pp. 3–19), distinguishes six consecutive periods in the development of the relative sites, based on stratigraphic evidence, ranging from the Mesolithic to the Early Iron Age. His periods 3 and 4 were neolithic; characteristic of the earlier of these was pit-comb pottery of Lialovo type, and typical of the other one, of the Late Neolithic, was pottery of the Volosovo and Balakhna types. He considers the earlier period to be of the third and the early second millennium, and the other one of the first half of the second millennium B.C.

New discoveries resulted in some alterations in the chronological scheme of the Volga-Oka Neolithic drawn by A. Ia. Bryusov in his classic work on the Russian Neolithic (1952). The earliest neolithic pottery of the Volga-Oka territory was that of the Lialovo type (A. Ia. Bryusov, *SA* 1960 (3), pp. 277–282); it has been found in the lowest neolithic layers of all sites in the area of the Volga-Oka Neolithic as defined by Bryusov, except the Belev group. The Volosovo and Balakhna cultures of this assemblage were later, of the second millennium B.C. The Lialovo culture was rooted in the local Central Russian Mesolithic; its flint industry was preponderantly microlithic of mesolithic tradition. Topics connected with the mesolithic sequence and transition to the Neolithic, have been discussed by N. P. Tretiakov (*MIA* 110 (1963), pp. 9–24) and by A. V. Koltsov (*SA* 1965 (4), pp. 18–26). The Lialovo territory seems to have originally extended also east of the lower Kama, south of the Volga, up to the region of the town of Arzamas east of Murom, where a site at Sakony on the river Tesha has been investigated by A. E. Alikhova (*KSIIMK* 75 (1959), pp. 138–144). The gradual evolution of this branch of the culture into that of Balakhna and its further development during the second millennium B.C., have been dealt with by I. K. Tsvetkova (*MIA* 110 (1963), pp. 54–84).

The upper Don, the present border of the forest-steppe and the steppe, is another region in which important investigations have been undertaken. The

stratified settlement at Dolgoe near Dankov (oblast of Lipetsk), nearly 300 km. south-south-east of Moscow, seems to have been one of the south-easternmost sites of the Volga-Oka Neolithic. Further south, north of Voronezh, sites of the early neolithic Comb-pricked ware culture have already been recorded. Three horizons have been distinguished in the occupation layer at Dolgoe by V. P. Levenok (*KSIAM* 92 (1962), pp. 76–83; *MIA* 131 (1965), pp. 223–251). The two lower horizons were neolithic, and the upper one, which lay over a sterile intercalation, was of the Early Bronze Age (Catacomb period). In the lowest horizon were uncovered middens containing Unio and Anadonta shells, besides animal and fish bones, flint tools and pottery. In the next horizon above pottery, flint tools and many bone articles were found; among the last were harpoons, halberds, daggers and arrow-heads, similar to those found in sites situated further north, as well as in mesolithic sites on the East Baltic coast. The pottery of the two lower horizons was of the pit-comb type. The inhabitants of the site, who were fishers and hunters, are considered to have been of northern origin. They are supposed to have arrived there from the Central Russian Plain at the turn of the fourth and third millennia. The site was abandoned in the last quarter of the third millennium. The new settlers who arrived there at the turn of the third and second millennia B.C. were a people of a different origin who came from the south.

The Russian Plain, enclosed by the upper Volga and the Oka, and by the Desna in the west, did not form a uniform province of the Volga-Oka Neolithic, as hitherto supposed. Its flint industry was of two different types, as shown by P. N. Tretiakov (*MIA* 131 (1965), pp. 214–222). One of these was proper to the territory within which the Lialovo pottery was the earliest, namely the central and eastern parts of Central Russia, as well as in the north. The other type of the flint industry, as mentioned in the preceding section, was characteristic of the Central Russian Upland and the Valdai Hills. In the north, it was associated with the local varieties of the Comb-pricked ware, but in the region on the upper Oka, south of Kaluga and Tula, it was found in sites of the Belev culture, considered previously as part of the Volga-Oka Neolithic. Topics connected with the Belev culture, and with the decoration (rhomboid pits) of its pottery have been discussed by I. G. Rosenfeldt (*KSIAM* 75 (1959), pp. 92–102).

The Riazan culture, also part of the Volga-Oka Neolithic, extending over the region on the middle Oka, was in fact a hybrid; it was very strongly affected by the Comb-pricked ware culture of the area to the south, as pointed out by P. N. Tretiakov (*SA* 1964 (4), pp. 18–24).

The Baltic countries

Not much can be said of the results of archaeological research in the

Baltic countries, as the relative reports have been published mainly in local periodicals not available in the main archaeological libraries in London. Very little has been published in the central Russian periodicals.

The book *Lietuvos Archaeogijos Bruozai* (*Outlines of Lithuanian Archaeology*, Vilnius (1961), 262 pages; exclusively in Lithuanian), by P. Kulikauskas, R. Kulikauskiene and A. Tautavičius, should be mentioned first. It contains a short chapter (pp. 53–86) devoted to the Neolithic of Lithuania (fourth and third millennia up to *c.* 1600 B.C.) in which also the Rzucewo (Haffküsten) culture of the Early Bronze Age has been dealt with. Special attention has been given to the exploitation of amber deposits on the Baltic coast, to amber carving, and to the diffusion (illustrated by a map) of amber objects within Lithuania.

In Latvia, new investigations were conducted of the well-known site at Sārnate, reported by L. V. Vankina (*SA* 1958(3), pp. 180–183). It has been established that the settlement extended over an area of *c.* seven hectares, of which only about one and a half hectares have been investigated so far. Remains of two huts were uncovered. They contained many wooden tools, including one bow and fragments of two others, amber pendants and buttons with V-perforation, but little pottery. The part excavated was of the second millennium B.C. Of importance are the results of Carbon-14 dating, 2530±250 B.C. (TA 24) for the neolithic remains of the site, which had been excavated previously.

A book in Russian by L. I. Jaanits, *Poseleniya Epokhi Neolita I Rannego Metalla V Priustie R. Emajõgi* (*Sites of the Neolithic and the Early Metal Age in the region of the Mouth of the Emajõgi*, Tallin (1959), 382 pages, 68 figures, 35 plates; with a summary in German), gives a full report on the excavation of sites on the river Akali and at Kullamägi. Conditions in Estonia during the period from the third to the first millennia B.C., the development and the reciprocal relations with other coeval cultures, as well as the changes in the economy of the population, have been discussed and illustrated by a series of maps which include also all the neighbouring areas. The chronological diagram (p. 293, fig. 63) based on the stratigraphic evidence, divides this development into five consecutive periods. The two earliest of these, the Early and Middle Neolithic, cover the third millennium. The earliest pottery of Estonia, of 'Narva' type, appeared during the first of these, in the first half of the third millennium; it exhibits many features in common with the Sperrings pottery of Finland, but also with that of the Valdai culture dealt with previously. The author suggests that the Narva pottery was of eastern origin, from the region on the Kama in East Russia; this theory has however been dismissed by N. N. Gurina (*MIA* 87 (1961)) in the work discussed later.

During the second stage of the Estonian Neolithic, in the second half of the third millennium, pit-comb ware of Central Russian type spread over the

country; at that time also amber personal ornaments and small amber figurines appeared. No Carbon 14 dates are available for this period, but Tamula and Villa, both of the Late Neolithic or Early Bronze Age, have been Carbon-14 dated as 1640±180 B.C. (TA 10) and 1610±240 B.C. respectively. At that period Corded Ware appeared in Estonia.

The book *Voprosy Etnicheskoi Istorii Estonskogo Naroda* (*Problems of the Ethnic History of the Estonian Nation*, Tallin (1956), 332 pages; with a summary in German) deserves mention. It contains an important article by H. Moora (pp. 49–141, 320–321) which in fact is a short outline of Estonian prehistory, and another by L. Jaanits (pp. 142–171, 321–322), which is a shortened version of the discussion of the conditions in Estonia during the Neolithic and Bronze Age given in the book referred to above. Of importance are also two volumes of the *Trudy Pribaltiiskoy Obiedinennoy Kompleksnoy Ekspeditsii* (both Moscow, 1959). Vol. I (editors S. H. Tarakanova and A. N. Terentieva) contains several reports on the excavation of neolithic sites in Estonia (by L. Jaanits) and in North-west Russia (by N. N. Gurina). Vol. II, entitled 'Etnicheskaya Antropologiya Vostochnoy Pribaltiki' by M. V. Vitov, K. Ia. Mark and N. N. Cheboksarov, is devoted to the prehistoric anthropology of the East Baltic area.

It may be mentioned here that according to Carbon 14 determinations of the Tallin Laboratory, the lower mesolithic layer at Kunda has been dated at 6380±210 B.C. (TA 14) and the upper mesolithic layer at 4055±210 B.C. (TA 16). The date of the lower mesolithic layer of the site of Narva has been given as 4060±210 B.C. (TA 17), and of the upper mesolithic layer of that site as 3340±250 B.C. G. N. Lisitsyna (*SA* 1958 (3), pp. 90–96) discusses the results of the pollen analysis of the site at Kunda.

Northern Russia

During the period under review, investigations were conducted in several sites in the northern part of Russia, in the areas which were hitherto blank spots on maps of the Neolithic. An important publication of the results of these is the book by N. N. Gurina, *Drevnaya Istoria Severnogo-Zapada Evropeyskoy Chasti SSSR* (*The Ancient History of the North-West of the USSR in Europe*, *MIA* 87 (1961), 588 pages with 213 figures including several maps; with a brief summary in German). It is divided into two parts. The first of these contains a detailed study of all remains in Karelia and in the province (oblast) of Leningrad from the time of the appearance of the earliest human groups in the Mesolithic, down to the thirteenth century A.D. The chronological division of the prehistoric past of the country into several periods is set out in the diagram on p. 48, in which drawings of the characteristic remains are inserted. Another diagram (pp. 51 ff.) presents a list of all sites described in the second part of the work (pp. 172 ff.),

arranged in the chronological groups to which they have been attributed. A supplementary article illustrated by many pollen diagrams, by G. N. Lisitsyna (pp. 535–578) discusses the post-glacial palaeo-geography and natural conditions in North-West Russia and Estonia.

The Neolithic of the country (pp. 45–80) has been divided into two main periods, the Early Neolithic (3000–2500 B.C.) and the Late Neolithic (2500–1500 B.C.). The two provinces have been dealt with separately. The earliest pottery of Karelia was of Sperrings type; the country seems to have been peopled by hunters and fishers who came there from southern Finland. By the end of the Early Neolithic, a new pottery, pit-comb ware, appeared, closely related to, or derived from, that of the Lialovo type of the Volga-Oka Neolithic. A new wave of hunters and fishers must have entered the country from the south and mingled with the earlier population. Slate tools and other remains imply that old ties with Finland had been maintained.

The Sperrings pottery had not reached the Leningrad province. There, the Estonian Narva pottery was the earliest (map on p. 78); it penetrated eastwards as far as the southern shore of Lake Ladoga. Gurina thinks that both the Sperrings and Narva types of pottery might have had some connection with the Maglemose culture. There was no continuity in the province of Leningrad in the development from the Mesolithic to the Neolithic; all neolithic connections of the province point to the East Baltic countries.

The pit-comb pottery characteristic of the subsequent period of the Neolithic in the Leningrad province was closely related to that of East Estonia and of the region of Novgorod in north-west Russia; it shows only slight traces of a connection with Karelia. The development of the Neolithic in both Karelia and the Leningrad province, and relations of their culture with those of other areas of Northern Russia up to the Urals, have been discussed and illustrated by a series of maps.

The famous cemetery of the Karelian culture on the Olenii Ostrov (Deer Island) on Lake Onega has only been mentioned in the list of sites. However, a special publication has been devoted by N. N. Gurina to this antiquity (*MIA* 47 (1956): 431 pages, 221 figures), which has been dated by her in the second half of the third millennium. It seems, however, that Swedish parallels (Västerbjers (Gotland), published by M. Stenberger, Stockholm 1943; see also his article in *SWIATOWIT* XXIII (1960), pp. 201 ff.) suggest that it lasted also over the early second millennium B.C., the late Neolithic of Karelia according to Gurina's scheme.

Investigations in the area of Lake Beloe, about 120 km. south-east of Lake Onega, filled in another gap in the knowledge of the Neolithic of northern Russia. The territory of the Kargopol culture has been extended south-west-

wards and its links with the Volga-Oka Neolithic established further south. An account of these excavations has been given by S. V. Oshibkina (*SA* 1966(1), pp. 265–269), with a map showing the position of the newly investigated sites.

A more detailed relation of these excavations appeared in a publication by the Provincial Museum of Vologda: *Sbornik Po Arkheologii Volodskoi Oblasti*, Vologda (1961). The article by I. K. Tsvetkova (pp. 47–71, 4 plates) reports on the investigation of several sites of the Neolithic and Bronze Age. The earliest sites yielded a pottery closely related to that of the Lialovo type of the Volga-Oka Neolithic, which indicates that the earliest neolithic settlers there were of Central Russian origin. Another article by A. Ia. Briusov (pp. 72–162) gives a full report of his excavation of the important site of the Kargopol culture at Karavaikha close to Lake Vozhe. It is provided with seven full-page illustrations and many diagrams. The author discusses the chronology of all main sites of the Kargopol culture and of the preceding mesolithic sites in the same area (Pogostishche, Modlona, etc.). The site of Karavaikha has been dated to the end of the third and the early second millennium B.C.

G. N. Lisitsyna (pp. 163–204) discusses the changes in the post-glacial climate of the region of Lake Vozhe. Her paper is illustrated by a series of pollen diagrams, and distinguishes four phases in its development. The late mesolithic site of Pogostishche belonged to the beginning of phase IIIb, and site Karavaikha to its end. Phase IIIb was the 'Climatic Optimum', the period of the maximum of deciduous woodland, which seems to correspond with the end of the Atlantic climate. The author mentions that at Karavaikha a few pollen-grains of cereals were found at depths of 85 and 105 cm. in a layer of peat on the bank of the river; they must have been washed down from the bank close to the settlement. According to the pollen diagram, the level in which these grains were found, belonged to the IVth phase, that of pine and spruce forests, probably the Sub-boreal climate, in the first half or the middle of the second millennium B.C.

Another 'blank' area investigated was the country around the town Syktyvkar on the Vychegda, a tributary of the Northern Dvina, about 700 km. east of the region dealt with above. The results were presented in a short article by G. M. Gurov (*SA* 1966(1), pp. 155–173), and a full report was published by him in a paperback *Vyshegodskii Kray* (*The Country of the Vyshegda*), Moscow (1965), 197 pages, 32 figures). In the latter publication, the author discusses the outlines of the prehistoric development of north-east Russia from the Mesolithic to the eighth century A.D. The changes in the development and in the extent of its cultures during the several periods distinguished, is shown in eight maps; a diagram (p. 56), illustrated with drawings of the most typical remains, gives their division into eight periods, ranging from the Mesolithic to the fifth century A.D. The earliest neolithic sites (Vis I and II) have been dated

to the second half of the third millennium. Their pottery links them with the Neolithic of the region on the Kama further south. Pottery of the subsequent stage (Vis III) shows some analogies to the Volga-Oka Neolithic. It has been dated at the turn of the third and second and the early second millennium B.C. The microlithic industry of all sites of the area, which appears alongside typical neolithic tools, implies close links with the local mesolithic culture of the preceding era, which was closely related to that of the Kama region.

A number of sites have been investigated about 400 km. south of the above group, in the region of Nolinsk on the Vyatka, and the report published by V. N. Denisov (*SA* 1958—(3), pp. 111–119). The neolithic site Bui I on the bank of the Vyatka has been dated at the end of the third and the early second millennium B.C. Its pottery, with a pit-cogged decoration, was related to that of the Late Neolithic of the region on the river Kama further south. Over these remains lay those of the Bronze Age.

The Middle Volga and the Urals

An important work on the Neolithic of the wide area around Kazan on the Middle Volga, has been published by A. Kh. Khalikov (*MIA* 61 (1958), pp. 11–44). It contains the description of a number of stratified sites (e.g. Observatoria III, Zaymishche IIIa) which yielded neolithic and Bronze Age layers of occupation. The stratigraphic evidence enabled the author to distinguish three stages in the development of the Kazan Neolithic, which jointly covered the third and early second millennium B.C. During the early stage, the territory belonged to the 'Kama Neolithic culture', characteristic of the region on the middle and upper Kama further east. Later, Central Russian elements, emanating from the Balakhna culture, gained the upper hand, and initiated a new period in the development of the country; they contributed to the formation of the local 'Kazan Neolithic culture'. The neolithic development of this area, and also conditions during the Neolithic in the country further south, down the Volga, have been discussed by N. Ia. Merpert (*MIA* 61 (1958), pp. 45–156), although his contribution is devoted mainly to the Bronze Age of the country.

Results of extensive investigations of the region of the town Ufa and along the rivers Byelaya and Ufa, were published in a series of short articles by G. N. Matiushin (*Bashkirskii Arkheologicheskii Sbornik*, Ufa (1959), pp. 17–29; *KSIAM* 92 (1962), pp. 91–96), and by L. Ia. Krizhevskaya (*MIA* 79 (1960), pp. 239–280; *SA* 1962(2), pp. 97–111). Researches have revealed that the area north of the town of Ufa was very thinly populated during the Neolithic. The tribes who visited it were related to those of the Kama-Chusova region to the north, and tribes of the Gorbunovo culture of the eastern slopes of the Middle

Urals also left traces of their presence there. Remains of several flint workshops were recorded. In one of these, at Ust-Yurezan, close to the junction of the Yurezan with the Ufa, about 20,000 flint artifacts were found. It has been dated by Krizhevskaya to the second half of the third millennium.

The earliest neolithic sites in the Southern Urals were of late mesolithic character and, as reported by G. N. Matiushin (*KSIAM* 97 (1964), pp. 66–74), only a number of tools characteristic of the Neolithic indicate their proper date (e.g. Akbuta on the upper Byelaya near Lumaguzino). Of an entirely different type were other, evidently later, neolithic sites of that region. One of these, Chebarkul II on Lake Chebarkul (oblast of Chelyabinsk), described by L. Ia. Krizhevskaya (*KSIAM* 97 (1964), pp. 75–81), had two layers of occupation. The lower one yielded pottery with a ' pricked ' stamped decoration typical of the Eastern Urals at the middle of the third millennium. It also shows many features in common with the Kelteminar culture of Chorasmia (Soviet Central Asia). The pottery in the upper layer was typical of the Gorbunovo culture of the end of the third and early second millennium B.C. Of about the same period was the settlement of Babarykino II situated on the border of the steppe and forest-steppe, described by K. V. Salnikov (*KSIAM* 85 (1961), pp. 3–10). Its pottery retained many archaic features but showed also an admixture of the Kelteminar elements and also of those characteristic of the Andronovo culture of the Early Bronze Age.

The Neolithic and the Bronze Age of the country on the eastern slopes of the Middle Urals has been dealt with by V. M. Raushenbakh in her book *Sredne Zauralye v Epokhu Neolita i Bronzy* (*The Middle Ural Country during the Neolithic and the Bronze Age*, *GIM* 29, Moscow (1956), 151 pages, 3 maps, 22 figures). The remains described there have been called the 'Gorbunovo culture', after the Gorbunovo peat-bog. The culture extended over the eastern slopes of the Middle Urals and partly also of the Southern Urals, and over a wide area east of the mountains, up to 250 km. deep. Its development has been divided into three periods, the first of which has been dated as from the middle of the third to the early second millennia B.C. The two subsequent periods were already of the second millennium B.C. Typical of the first period were the site Strelka and the lowest layer of site 'Section 6', both of the Gorbunovo peat-bog, and also site Poludenka I near Nizhne-Tagil.

In a later report, V. M. Raushenbakh (*KSIAM* 75 (1959), pp. 123–131) gives an account of her excavation of sites Yazevskaya I and II of the Shigir peat-bog. They yielded remains characteristic of the first and second periods of the Gorbunovo culture. The pollen diagram, published by S. N. Tyuremnov (*KSIAM* 75 (1959), pp. 132–137) was very similar to that of site 'Section 6' of the Gorbunovo peat. Raushenbakh points out that an earlier layer of the

Shigir peat-bog, in which probably the well-known mesolithic articles were found, has been dated by Tyuremnov to the sixth–fifth millennia B.C., at a date higher than estimated by her in the book mentioned above.

Considerations relating to the racial and cultural development from the Palaeolithic to the Neolithic in the areas dealt with in this section, on the middle Volga and the Kama, and in the Urals, are the theme of a contribution by O. N. Bahder (*MIA* 79 (1960), pp. 88–103). He points out that its mesolithic remains bear an European character and exhibit close ties with the Crimea. The position was different during the Neolithic. Cultures of the Southern Urals show southern connections with Soviet Central Asia (Chorasmia). The Middle Urals were divided into two distinct provinces. The eastern one, on the Siberian side of the mountains, was the domain of the Gorbunovo culture called by this author the 'East Ural' or 'Puludenka' culture. West of the Middle Urals up to the region of Kazan on the middle Volga, extended the 'Kama Neolithic culture'.

Finally, the article by M. Gimbutas (*PPS* XXIV (1958), pp. 120–157) should be mentioned. All the more important sites of the whole area around the Urals have been briefly described by her, their division into several periods established, and their chronology discussed. The results have been shown in the chronological diagram (p. 155). However, Carbon 14 dates published recently, 2400±200 B.C. (Mo 1) for 'Section 6', and 2840±200 B.C. (Mo 2) for Strelka, both of the Gorbunovo peat-bog, imply that the beginning of the early period of the Gorbunovo culture must be put back to the first half of the third millennium. The chronological scheme of the diagram must be adjusted accordingly.

Soviet Central Asia

The results of extensive research and excavations in the southern part of Soviet Central Asia have been summarized in the book by V. M. Masson, *Srednyaya Aziya i Dryevnii Vostok* (*Central Asia and the Ancient Orient*, Moscow–Leningrad (1964), 467 pages, 85 figures, including several chronological diagrams and maps, with an index at the end). In the first part (pp. 11–81), the formation of the earliest agricultural communities in Central Asia (the Jeytun culture) is discussed, and its local mesolithic background (the Jebel culture), and even the palaeolithic development, as well as the early agricultural cultures of Iran described. The second part (pp. 125–187) is devoted to the description of the fully developed agricultural cultures of Soviet Central Asia, the Anau I, Namazga, Geoksiur and others, together with the cultures of the country further north around the Sea of Aral, the Kelteminar culture of the steppe. The parallel development in the neighbouring countries, Iran, Afghanistan and Northern India, has also been dealt with and their bearing on the

cultures of Soviet Central Asia discussed. The chronological diagram (p. 169) shows the position of the early cultures, of the sixth to second millennia B.C., of the Soviet territory, and another diagram (p. 455) gives the position of the latter cultures within the chronological framework of the wider area embracing also cultures of Iran, Afghanistan and Northern India of the same period. The Carbon 14 dates published recently for sites of the Namazga I and Geoksiur periods, some higher, others lower than those previously estimated, call for the revision of the chronology proposed in the scheme. A summary of the results of this study has been published by Masson in a short article (*SA*, 1964(1), pp. 12–28), provided with a chronological diagram.

Map III

1 Dam-Dam Chesme	4 Namazga	7 Uyubat-Khulgan	10 Sergeevka
2 Jeytun	5 Geoksiur	8 Biur	11 Kirovskoe
3 Kara-Depe	6 Lake Andreevskoe	9 Gromatykha	and Psun

Several smaller reports on investigations in the area above have been published in various periodicals. Those which appeared a few years ago have been, for the most part, taken into account in the book by Masson. Mentioned here may be a series of articles by the latter author (*SA* 1957(4), pp. 44–54 and 1962(3), pp. 157–175; *KSIAM* 91 (1962), pp. 3–13), by V. I. Sarianida (*SA*

1959(2), pp. 235–238; 1960(3), pp. 141–152; 1962(1), pp. 44–56; *KSIAM* 91 (1962), pp. 22–29; *NSA* pp. 102–105 on the cemetery of Geoksiur), and by I. N. Khlopin (*KSIAM* 91 (1962), pp. 14–21).

The earlier literature on the subject has been reviewed by V. I. Sarianidi and I. N. Khlopin (*SA* 1962(2), pp. 262–267). A joint contribution recently published by G. N. Lisitsyna, V. M. Masson, V. I. Sarianidi and I. N. Khlopin (*SA* 1965(1), pp. 9–23) gives a summary of the results of the archaeological and palaeo-geographic study of the oasis of Geoksiur from the time of its earliest settlement probably early in the fourth millennium, to the middle of the second millennium B.C.

Results of investigations of the Stone Age of Tadzhikstan have been published by A. P. Okladnikov (*MIA* 66 (1958), pp. 11–71), and of Eastern Pamir by V. A. Ranov (*MIA* 124 (1964), pp. 7–50). The aeneolithic remains of Southern Turkmenia have been dealt with in four volumes, *Eneolit Iuzhnykh Oblastey Sredney Azii* (*The Aeneolithic of the Southern Provinces of Central Asia*, *SVOD*, 6 3–8) the first (1962) by I. N. Khlopin, the second (1963) by V. M. Masson, the fourth (1965) by V. I. Sarianidi. Each of these volumes concentrates on a particular region of the country and, besides the description of its remains, is provided with maps and chronological diagrams. Worth while mentioning is that Kara-Depe, which belonged to period Namazga III, has been C–14 dated to 2750±220 B.C.

A preliminary report on the excavation of the important cave Dam-Dam Cheshme 2 in the region of Kopet-Dago on the eastern Caspian coast, has been given by G. E. Markov (*SA* 1966(2), pp. 104–123, with 11 figs.). The earliest, the ninth occupation layer of the cave, goes back to the thirteenth millennium B.C. The fourth has been equated with Jarmo (seventh–sixth millennium) and the third with Jeytun. The last has been Carbon 14 dated as of the fourth millennium. The development of the irrigation system and methods of Central Asia from the fourth millennium onwards has been discussed by B. A. Latynin (*SA* 1959(3), pp. 19–27; and also in a pamphlet, *Voprosy Istorii Irrigatsii i Oroshaemogo Zemledeliya Drevney Fergany*, Leningrad University (1962, 31 pages).

The results of the chemical and spectrographic analyses of metal objects of the Anau culture (fourth–third millennia) by E. N. Chernykh (*KSIAM* 91 (1962), pp. 30–37) have revealed that the metal used for manufacturing them originated from various countries.

Chorasmia

A few large books have been devoted to the publication of the results of investigation of ancient Chorasmia, the very fertile country south of the Sea of Aral, around the delta of the Amu-Daria. One of these, by S. P. Tolstov, *Po*

Drevnim Deltam Oksa i Yaksarta (*Along the Deltas of the Oxus and the Iaxartes*, Moscow (1962), 324 pages, with a large coloured map), contains a chapter (pp. 27–47) on the Neolithic of ancient Chorasmia and the country around. The Lower Uzboi and the Kelteminar cultures are dealt with, and the connections of the latter with its coeval cultures of the Urals (and in particular with the Levshino culture of the early second millennium B.C.) discussed. The neolithic remains of Chorasmia have been likewise dealt with by S. P. Tolstov (pp. 3 ff.) and by N. N. Vakturskaya (pp. 39 ff.) in vol. I of the publication *Materialy Khorezmskoy Ekspeditsii, 1954–1956* (Moscow, 1959), and also by M. A. Itina (pp. 259 ff.) in vol. II of the series *Trudy Khorezmskoy Arkheologo-Etnograficheskoy Ekspeditsii*, 1949–1953 (Moscow, 1958). The early pottery of Chorasmia is the theme of a contribution by the latter author, M. A. Itina (pp. 5 ff.) in vol. IV of the same series (Moscow, 1959).

Siberia

A few works in Siberian prehistory appeared outside the USSR. Among these is the translation of the important book, originally published in Russian (Moscow, 1956) by A. P. Okladnikov, *The Ancient Population of Siberia and its Cultures* (Cambridge, Mass., Peabody Museum, 1959). One of its chapters (pp. 12–21) is devoted to the Neolithic of Siberia. The Siberian Neolithic has likewise been dealt with in a number of articles of the book *North Asian Archaeology* (Ed. H. N. Michael, Toronto Press, 1964) which contains translations of selected articles on Siberian archaeology by various Soviet scholars, and also by Chester S. Chard in his article 'An Outline of the Prehistory of Siberia; Part I, the Pre-Metal Periods' (*Southwestern Journal of Anthropology*, 14, No. 1 (1958), Albuquerque, offprint, 33 pages).

A very good review of conditions during the Neolithic within the whole of Soviet Northern Asia has been given by C. S. Chard (*Hamburg Congress*, pp. 181–185). The division is there set out of this huge territory into several distinct provinces; the characteristic features of the main neolithic culture have been pointed out, and the problems relating to these within each of the provinces discussed.

Investigations in Western Siberia, in the region of the town of Tiumen, have been published by N. P. Kiparisova (*SA* 1960 (2), pp. 7 ff.) It seems worth while mentioning that a Carbon 14 date for the second cemetery of Peremiskii on Lake Andreevskoe near Tiumen has been given as 2040±130 B.C. (LE 357).

M. F. Kosarev (*SA* 1966(2), pp. 24–32) discussed problems relating to the conditions and development of cultures mainly of the second, but partly also of the third, millennium in the wide area within the basin of the Middle Ob and middle Irtysh in the central part of Siberia.

The Neolithic of the area further east, on the Yenissey, has been dealt with by O. P. Okladnikov in his more recent article (*SA* 1957(1), pp. 26 ff.). L. P. Kyzlasov (*SA* 1962(2), pp. 112–123) gives the account of his excavation of Afanasievo cemeteries in the central part of Khakasia, at Uyabat-Khulgan and Biur, about 100 km. west of Minusinsk. They consisted each of a few small mounds (6–12 m. in diameter) raised of quarried stones. The burial ritual and the poor grave-inventory were proper to the Afanasievo culture, although pottery showed some characteristic features of their own. Animal bones, the debris of funeral feasts, have been found in all mounds investigated, and were identified as those of cow and horse. The study of the cranial material revealed that the skulls were of the Europeidal type except one, which was brachycephalic with Mongoloid features. It implies that the population of this border area was already of a mixed character. The cemeteries have been dated by the author to the second half of the third millennium B.C. A survey of the valley of the Podkamennaya Tunguska, a right tributary of the Yenissey, by G. I. Andreey and Iu. M. Fomin, brought to light a series of sites of the period of the third and the first millennia B.C. (*KSIAM* 101 (1964), pp. 94 ff.; *SA* 1965 (3), pp. 100 ff.).

The palaeolithic traditions in the neolithic art of the Siberian forest zone have been the theme of a paper by A. Okladnikov (*Rapports*, in French). The author discussed the petroglyphs of the region of Tomsk in the central part of Siberia, and points to the differences between the art of the central part of Siberia and the art of the petroglyphs of the Soviet Far East. He concludes that ancient palaeolithic traditions in art faded out gradually with the spread of agriculture and the settled mode of life. They survived up to the present time only in the Siberian Far East, among the fisher and hunter tribes.

The Baikal Country and the Soviet Far East

The pre-pottery Neolithic of the area around Lake Baikal has been dealt with by L. P. Chlobystin (*MIA* 131 (1965), pp. 252–279), and R. V. Kozyreva discussed in the same volume (pp. 280–296) the Neolithic of Sakhalin and its connections with the Neolithic in Japan. Two Carbon 14 dates have been published for the early remains of the Soviet Far East. The site of Bukhta (Bay) Psun has been dated to 2290±60 (LE 193), and the Kirovskie settlement (both near Vladivostok) to 2190±60 B.C. (LE 177). The latter has been considered to belong to the Early Bronze Age.

Investigations in East Siberia and the Soviet Far East have been briefly reviewed by Iu. A. Mochanov (*SA* 1966(2), pp. 126–136), who also described the excavation of a stratified site, Bekachi I, on the river Aldan, situated on the border of the taiga-zone. The early neolithic layer of this site has been dated by him as of the fifth–fourth millennium, and that of the fully developed Neolithic as of the fourth–third millennium.

The valley of the middle Amur in the region of Blagoveshchensk (about 1,000 km. north of Vladivostok) and the valley of its tributary, the Zei, have been investigated by A. P. Okladnikov (*SA* 1966 (1), pp. 32 ff.). A few neolithic sites were excavated which had mostly two occupation layers. The upper layer was always of the developed Neolithic, the flint industry of the lower one was of mesolithic character; its neolithic date has been indicated by the presence of pottery. The author emphasizes that in the area on the middle Amur, mesolithic traditions survived far into the Neolithic. The technique in which the implements of the lower layer were made was characteristic of the late mesolithic Khoabin culture of South-East Asia. At the same time, the remains of the middle Amur region reflect a strong influence emanating from the west, from the country west and east of the Baikal Sea. The Middle Amur Neolithic culture differed decisively from its coeval culture of the country on the lower Amur.

Reviews

MILLER, R. L. and KAHN, J. S. *Statistical Analysis in the Geological Sciences*. London & New York, Wiley, 1962. xiii, 483 pp. Illustrated. 95s.

Interest in the application of statistical methods to archaeological material is growing rapidly among archaeologists. The realization of how much can be gained by so doing is making its impact, but the search for suitable methods for coping with archaeological problems and the kind of data available to archaeologists is still in its early stages. All is still experimental and there are few fixed points or established ways of doing things. Unfortunately, too, most archaeologists are poorly equipped by their educational background to cope with the mathematics involved (this reviewer must count himself among the number so handicapped), and certainly anyone wishing to embark on serious experiments with statistical techniques does well to seek the advice and collaboration of a trained statistician.

Books, however, can also help, at any rate in suggesting ideas to those of us who are willing and able to cope with mathematical language. Miller and Kahn have produced a comprehensive review of the uses of statistics in geology which should be pondered by any archaeologist interested in their application to his field. In the geological sciences much of the data and some of the problems resemble to a certain extent those of archaeology, and statistical methods have long been in use, so that there is now a relatively well-tried and tested body of techniques available for use on standard types of problem. Archaeology, as is well known, has in the past borrowed some of its basic principles and methods from the geological sciences, and may perhaps now turn to geology once more for aid. Probably the most immediately interesting section is Chapter 12, on the applications of multivariate analysis to the study of fossils, but there is also much else in this book which could be suggestive and potentially useful. It is likely to be some years before we have a *Statistics for the Archaeologist* comparable to this *Statistics for Geologists* (its sub-title, by the way), and in the meantime this is a book which the statistics-minded archaeologist might profitably consult.

J. D. Evans

NAIRN, A. E. M., ed. *Problems in Palaeoclimatology*. London, Interscience Publishers, 1964. xiii–705 pp. 147s.

This book is a collection of papers presented at the NATO Palaeoclimates Conference held at the University of Newcastle-upon-Tyne in 1963. The conference included eleven sessions devoted to different topics, and these roughly form the individual chapters of the book. Each chapter is opened by a brief statement of the topic under discussion, which shows how the contributions which follow relate to that topic. By this means the fault so common in symposium volumes, that they read like a collection of discrete technical papers, is to some extent overcome. Furthermore, each subject is well rounded off by a précis of the discussion which followed each session. At the end of each chapter there is a bibliography for each paper; some of these are very extensive and provide a valuable coverage of existing literature in relatively new fields.

Since this conference was arranged for geologists, it is to be expected that the relevance of the book to archaeology would be slight, but indirectly it has many implications for archaeologists. The papers cover basic principles and methods which, though discussed here in a much earlier geological context than that which concerns the archaeologist, often have their applications in the Quaternary and Recent periods.

The physical conditions underlying climatic change in the Quaternary are dealt with in one chapter and examples include the Little Ice Age (A.D. 1550–1850) at one extreme, and the climatic significance of fossil dunes in Africa at the other. An arbitrary selection one might think, but reports can only come from where research is actually taking place. The final Chapter, entitled 'Problems of Sediments and Soils' concentrates on the status of iron in soils and sediments; there is no attempt to deal with fossil soils as such, although it is pointed out elsewhere that they can have strong climatic implications.

This book is not for the general reader; it is a collection of research papers, many of them highly technical. To the research worker in the field of past environments, however, it is a valuable text which tells him what has been achieved and is bound to stimulate new ideas and applications.

G. W. DIMBLEBY

SEMENOV, S. A. *Prehistoric Technology*. Tr. and with a preface by M. W. Thompson. London, Cory, Adams & Mackay, 1964. xii, 211 pp. 105 figs. 63s.

From 1934 onwards research into the manufacture and use of prehistoric artifacts detected by a microscopic study of the traces of wear on them has been carried out in the Laboratory of Historical Technology in Moscow. Professor Semenov's book is the first to give some of the results in English and, although narrower in scope than its title suggests, it opens a new approach to an appreciation of Upper Palaeolithic technology. It also covers pecking, grinding and polishing techniques and some Neolithic, Bronze and Iron Age stone and bone tools are considered.

Section I describes natural weathering of stone and bone as well as the striations, abrasions and polished areas produced by the hand of man in basic working processes. The section finishes with an account of the preparation of the surface to be examined under the microscope to bring out essential features and the optical and photographic apparatus used.

The second section deals with the properties of the main minerals and rocks used by early man, his techniques for obtaining and working them, and the quality and functions of the tools identified by analysing the direction and nature of the striations and abrasions on them.

Section III follows the same pattern for bone, antler and ivory and includes some Eskimo material as well as prehistoric, and the fourth section deals with the development of tools through the Stone Age.

Many of the conclusions confirm previous ideas as to the function of Stone Age tools and implements, but some tools, such as meat and whittling knives, appear to be identifiable only under the microscope by interpreting the type of polish along their edges. Other polished areas Dr. Semenov identifies as due to friction from the hand of the user—one of the most interesting being in the hollow or shouldered points from Kostienki I, originally regarded as javelin heads, but the wear now suggests their use in skinning and disembowelling mammoths.

Other new interpretations include a utilitarian explanation for the fine Solutrean retouch as being intended to flatten the natural curve of a blade to improve its ballistic properties. This same reason is adduced for the shorter length of blade used in microliths.

The book has many line drawings showing the tools in action and is well illustrated, apart from the unfortunate lack of scales. Another criticism is the lack of statistical details on which conclusions are based and Dr. Thompson, the translator, points out that the selective nature of the specimens should be borne in mind. Comparison has evidently been made with modern metal tools in some cases, such as burins, but further details as to the diagnostic features and what proportion of prehistoric tools showed them would allow more reliance on the results as well as assist other workers trying to find a more objective approach to the typology of stone tools.

J. M. SHELDON

SAGGS, H. W. F. *Everyday Life in Babylonia and Assyria.* London, Batsford, 1965. 207 pp. 115 figs. 21s.

Like his first popular book, *The Greatness that was Babylon*, Dr. Saggs' new contribution is extremely well done and should continue to stimulate interest in Mesopotamian antiquity among non-specialist readers. It is now more than ten years since an English translation of a work by Contenau appeared under a similar heading, and a good deal more relevant information has become available since that was written. As an Akkadian philologist and teacher, Dr. Saggs is well equipped to evoke an authentic picture of how people lived and the way in which their minds worked in the second and early third millennia, whether they were pure-bred Babylonians and Assyrians or Amorites on the Middle Euphrates.

After a brief historical introduction, life in Zimri-lim's eighteenth-century palace at Mari makes a good beginning, with much comparatively new material derived from the famous Mari archives. Next there are chapters on the place of the scribe in Babylonian society, Assyrian warfare, religion, crafts, industries and legal affairs, with a final section on urban culture in Nebuchadnezzar's Babylon. In two particular cases, Dr. Saggs follows the career of imaginary individuals, whose behaviour illustrates some facet of society during a particular epoch. Thus we have the Babylonian metal-smith, Bel-ibni and his wife, Kudda; a quietly domesticated couple, in some ways more sympathetic than the awkwardly-named Qurdi-Ashur-Lamur, an Assyrian official whose eye tends to be caught by 'a young lady from among the native captives'. And perhaps at this point, one might raise a very small complaint against the philologist's use of proper names in a more historical setting. Fashions in the transliteration of these seem to change with bewildering rapidity; and names are found re-spelt almost before one has become accustomed to reading them. Thus, Shamsi-Adad's son, Yasmah-Adad in Dr. Saggs' earlier book, here becomes Yasmakh, whereas Dr. Kupper in the Cambridge Ancient History prefers Iasmakh-Adad.

Among Dr. Saggs' illustrations, a rather conventional collection of half-tones is happily supplemented by several score of drawings in pen-and-ink, especially made for the purpose. They also are technically well done and (with the exception perhaps of Fig. 34, which is inaccurate) greatly add to the attraction of the book.

SETON LLOYD

CULICAN, William. *The Medes and Persians.* London, Thames and Hudson, 1965. 190 pp. 54 figs. 48 pls. 35s.

The Medes and Persians is one of the latest in Thames and Hudson's series, *Ancient Peoples and Places*, edited by Glyn Daniel. It shares many of the faults common to this series, such as inadequate maps and the omission of any scale on the plates.

In writing about the Medes and Persians, Mr. Culican has chosen an interesting subject, but in attempting it he is perhaps a little premature for as yet very little that can be considered certain is known about the Medes. Mentions of their activities occur in contemporary Assyrian texts and a few traditions were recorded by later Greek historians. But a Median site has still to be excavated. The most obvious site, Ecbatana or Hamadan, a city founded by the Medes and also used by the Achaemenians is, unfortunately for the archaeologist, still occupied today. Of the many varied and still unidentified artistic styles displayed on early Iranian objects in museums and private collections, some authorities have conjectured that one or another could with justice be called Median. However, until excavation has revealed what can definitely be called Median, this term is perhaps better avoided. Mr. Culican's account of the pre-Achaemenian era, which he greatly simplifies by ignoring this and other problems, is likewise conjectural.

This book contains many new ideas, particularly about pre-Achaemenian art. Unfortunately, these are often based on tenuous grounds. For instance, on page 118, Mr. Culican says, 'Three drinking cups with double handles in animal form and friezes of animals thus appear to belong to the very beginning of Achaemenian toreutics: indeed they are probably Median'. He then immediately claims them as 'the only extant examples of the treasures which made Ecbatana famous before ever Pasargadae or Persepolis were built'!

While the Medes remain an enigma, much is known of the art, history and architecture of the Achaemenian Persians and Mr. Culican retells the familiar story vividly. However, this book cannot be recommended for students, for many of his ideas still require proving.

GEORGINA HERMANN

EISSFELDT, Otto. *The Old Testament: an introduction.* Translated by Peter R. Akroyd. Oxford, Blackwells, 1965. 861 pp. 70s.

Merely to cite the facts, that Otto Eissfeldt's *Einleitung in das Alte Testament* was first published in 1934, has since seen two later German editions, and now appears in an English translation, is sufficient to prove the high merit of this volume. It is an introduction in the technical sense understood by Biblical scholars, being concerned almost exclusively with the literary analysis of the books of the Old Testament (with the Apocrypha and the Pseudepigrapha), and it traces in detail the origins and later development of the various documents which, in the author's opinion, went towards the making of finally accepted canon. Eissfeldt adheres firmly to the 'documentary hypothesis', which seeks to understand the growth of the Pentateuch and the historical books of the Bible by assuming separate continuous 'strands' of written material, originally running parallel, but later on various occasions combined by redactors to produce the arrangement that we now have. Not all scholars accept this theory, and not all of those who do have followed Eissfeldt entirely in his own particular analysis. His isolation of a document (L) which he suggests originated between 950 and 850 B.C., and so is earlier than the more generally distinguished sources (J. E, P, and D), has, for example, been severely criticised. Such controversies hardly concern us here, however. Used cautiously, as the author himself warns us to do (pp. 240–1), the literary criticism of the Old Testament enables us the more readily to appreciate the way in which this great body of literature has been formed, and thus the more easily and judiciously to understand its content. The great virtue of the book is that it takes into full account the theories of others in this field, so that even if some of the author's conclusions, and even his premises, have to be rejected, what remains is still comprehensive survey of the greatest value. Moreover—and it is most important to stress this here—it should be of value not only to the Biblical scholar *sensu strictu.* Taken as a whole, the Old Testament is, after all, without doubt the most significant historical document to have come down to us from the pre-classical world, and so all interested in that world are dependent upon it. Eissfeldt's *Introduction* contains a wealth of matter of paramount importance for the student of the ancient East. For example, his treatment (pp. 9-127) of the various literary forms—speeches, contracts, myths, proverbs, poems, laws, prophesies, etc.—which lie behind the Old Testament throws much reflected light on the 'prehistory' of other comparable literatures, and emphasises the part played by oral tradition in this connection. Other sections which should be valued by the wider audience which will now have access to them are those on the Qumran Texts (pp. 637-668), and on Books and Writing (pp. 670–8). Finally, it must be said that the English translation is always excellent and often elegant, and that the opportunity has been taken by Professor Ackroyd to bring up-to-date the exhaustive bibliography.

PETER PARR

JAŹDŹEWSKI, Konrad. *Poland.* London, Thames and Hudson, 1965. 240pp. 77pls. 33 figs. 35s.

In this book on Poland in the Ancient Peoples and Places series Professor Jaźdźewski has made available a general account of the country's prehistory from the Palaeolithic onwards, with some concluding observations which bring him up to the 10th century A.D. The Palaeolithic is described in an episodic way which is perhaps inevitable until we have fuller documentation for this region, but the author is careful to describe the glacial episodes which conditioned both the extent of settlement and its survival in the record. The Mesolithic is also outlined, but the account of the Neolithic is fuller and rightly does not pretend to be able to explain adequately the mutual relationship of those groups of the North European plain which have their various assemblages apportioned in varying permutations, such as the corded ware (p.98). It is not really clear that the sub-heading of the following chapter on the Bronze and Early Iron Ages—'Progressive Concentration and Stabilization'—is borne out by the material; the question of whether the 'cultural associations formed at that time in Poland . . . . persisted but with little change well into the Iron Age, in some instances into the Migration Period and even into the Middle Ages' (p. 103) is of course a very wide one. However the subsequent chapter covers in outline the many and various peoples now recognizably involved in this process.

The reader will want to follow up the accounts, but the bibliography emphasises how much of the relevant literature is in Polish. This of course is one of the initially valuable points about the book itself; it is an English survey. And it fulfils the requirements of this series. It is not misleading, although inevitably simplified, and it is quite fully illustrated. Professor Jaźdźewski gives an undeniably authoritative, but perhaps also conventional version of events in this area. Some simplified distribution maps would not have come amiss.

Objection could be made, in particular instances here, to certain statements as exemplifying a more general carelessness of language among archaeologists. This must in turn derive from careless formulation of the ideas behind it. 'The Mesolithic is a typically transitional epoch, as its name implies' (p. 48); 'The principal reason for the diffusion of Neolithic culture and for the direction of its advance was climatic change' (p. 58) (I do not understand whether the statement following this one is meant to imply a further amelioration of climate in Poland during the Sub-Boreal over and above the Atlantic, to support this contention.); 'The developed metallurgy of the Unetice culture resulted in the production of surplus wealth' (p. 107). This last is a fair example of a reversible causal statement, and all these can be seen to conceal truths rather than reveal them. And again we have agglutinative classification, common in European archaeology: '. . . defined as . . . a blend of Upper Acheulian, Micoquian, Levalloisian and proto-Aurignacian elements' (p. 30).

On the other hand Professor Jaźdźewski does make clear the use of terms, such as, on p. 71, that Tisza often means Lengyel culture in Polish archaeological literature (even if Lengyel in Hungarian in fact means 'Pole'!) and how he proposes to use it. All clarification of names is valuable to anyone wrestling for the first time with the perversities of European onomastics and toponymics. He also makes clear that the Danish system of classification of the TRB cannot be applied directly to Poland.

There are some minor slips (p. 95 should read 'left' bank of the Bug) but this if not revolutionary is a straightforward book of some authority and worth reading on this account.

J. G. NANDRIS

TROEBST, Cord-Christian. *Conquest of the Sea.* Translated by Brian C. Price and Elizabeth Price. London: Hodder & Stoughton, 1963. VII+269 pp. 14 pls. 30s.
THROCKMORTON, Peter. *The Lost Ships.* London: Cape, 1965. x, 260 pp. 40 pls. Map. 25s.

Underwater exploration and research have advanced rapidly since the war, and the development of scientific instruments has extended our understanding of the world beneath the sea. Troebst's survey supplies a useful background to what has been achieved in a compact and readable compass. Though not directly connected with marine archaeology, it is a good introduction to the wider field of sea research.

Throckmorton's story of the sunken ships off the Turkish coast, which led to the first archaeological expedition to excavate an ancient ship, is well and interestingly told.

He relates how, having learned to dive to the Pacific, he was eventually able to fulfil his ambition to search for sunken ships. He tells of his adventures and persistent exploration with the sponge divers of Bodrum, where he was joined by Miss Frost; of the discovery of the Bronze Age wreck off Cape Gelidonya and the subsequent organisation of the expedition by Pensylvania University Museum and this Institute to excavate it.

Not only is it, once again, an account of individual enterprise, which led to important archaeological discoveries, but it is also a vivid picture of life on the west coast of Turkey amid the dying sponge-fishing industry.

From these discoveries scientific underwater archaeological exploration may be said to have started.

J. DU PLAT TAYLOR

DOCKSTADER, Frederick D. *Indian Art of Central America.* London, Cory Adams and Mackay, 1964. 221 pp. 248 pls. 147s.

The importance of this book, as its title indicates, is that it gives a general outline of the art of the American Indians, a people who lived in this area before 1492 and who at the present, even though they are mixed with Europeans, keep part of this ancient art.

This geographical area includes the Mexican Republic, Central American countries and certain Islands of the Caribbean. If the author preferred the geographical term of Central America instead of the cultural one of Meso-America, it was because the latter excludes all northern Mexico, part of Costa Rica and Panama and the Caribbean islands

The photographs are arranged in a geographical sequence starting with those masterpieces which come from the North and proceeding South. The name of the particular region from which each comes is given, and a good number of examples of the post-Columbian Indian crafts are included which, in spite of their certain Spanish or other European infiuence, are really Indian.

However, in the text the author sometimes has to use cultural terms such as *zapoteca* and *maya.* In this section he presents the concepts and characteristics of the different cultural areas and the differences between each geographical region. It is remarkable that the most common themes of this art are those of every day work; erotic themes are very rare; the combination of social, religious and economic functions were the primary goals for the pre-Hispanic artist, but the strongest theme of Central American art is religion.

It is very important to realise that because of difficulty in connecting the art of so many cultures which arose in different times and places in the Central American region, sometimes the concepts are not very clear and in certain cases are mixed; for example, it is possible that readers might think that development of cultures and influences took place between areas only in one direction, north to south. At the same time it is important to notice that the chronological chapter is only an attempt to help readers to place each masterpiece of this Indian art in time, but it is not a good chronology for other purposes.

The presentation of plates and photographs is very good indeed.

NOEMI CASTILLO

BOOKS RECEIVED

The following books have been received. The fact that they are listed here does not preclude their review in a later issue:—

ALDRED, C. *Egypt to the end of the Old Kingdom,* London, Thames & Hudson, 1965. 30s.

CERAM, C. W., *The World of Archaeology,* London. Thames & Hudson, 1966. 42s.

DAGEN, B., Le BERRE, M. & SCHULUMBERGER, D. *Monuments préislamiques d'Afghanistan.* Paris, Klüncksiek, 1964.

FAGAN, B., *Southern Africa* (*Ancient Peoples & places*), London, Thames & Hudson, 1965, 35s.

KUMMEL, B. & RAUP, D. M. *Handbook of Palaeontological Techniques,* London, W. H. Freeman, 1965. 130s.

LONGWORTH, I., *Yorkshire* (*Regional Archaeologies*), London, Cory Adams & Mackay, 1965, 15s.

MALLOWAN, M. E. L. *Early Mesopotamia and Iran,* London, Thames & Hudson, 1965. 30s.

MELLAART, J., *Earliest Civilizations of the Near East,* London, Thames & Hudson, 1965. 35s.

PHILLIPS, E. D., *The Royal Hordes,* London, Thames & Hudson, 1965. 30s.

REICHEL-DOLMATOFF, G., *Columbia* (*Ancient Peoples and Places*), London, Thames & Hudson, 1965. 30s.

RICE, D. TALBOT., *The Dark Ages,* London, Thames & Hudson, 1965, 8 gns.

WATSON, K., *North Wales* (*Regional Archaeologies*), London, Cory Adams & Mackay, 1965. 15s.

WATSON, W., *Early Civilization in China,* London, Thames & Hudson, 1966. 30s.

WHEELER, R. E. M., *Civilizations of the Indus Valley and beyond,* London, Thames & Hudson, 1966. 30s.

WHEELER, R. E. M., *Roman Art & Architecture,* London, Thames & Hudson, 1965. 35s.

INSTITUTE OF ARCHAEOLOGY

Twenty-second
ANNUAL REPORT

1 August 1964 — 31 July 1965

INSTITUTE OF ARCHAEOLOGY

COMMITTEE OF MANAGEMENT

THE VICE-CHANCELLOR (Sir Thomas Creed)
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The President of the Prehistoric Society (or other representative) (Dr. J. D. Cowen)*
The President of the Society of Antiquaries of London (or other representative) (Sir Mortimer Wheeler)

Recognised or Appointed Teachers in cognate subjects, or Heads of Schools or Institutes in the University:—

Professor K. de B. Codrington	Sir John Lockwood
Professor P. E. Corbett	Professor F. Norman
Professor W. B. Emery	Professor A. H. Smith
Professor C. Daryll Forde*	*One vacancy*

Two members of the non-professorial staff nominated by the non-professorial staff through the Academic Board:—

Dr. I. W. Cornwall	Mr. H. W. M. Hodges

The four Professorial Heads of Department of the Institute of Archaeology (ex officio):—

Professor G. W. Dimbleby*	Professor S. S. Frere
Professor J. D. Evans	Professor S. H. F. Lloyd

Five other persons:—

Mr. R. L. S. Bruce-Mitford	Professor D. McKie
Professor J. G. D. Clark	*One vacancy*
Sir Eric Fletcher	

SIR JOHN LOCKWOOD

The Institute shares with other parts of the University a sense of serious loss in the death of Sir John Lockwood in July. Sir John had taken an active interest in the affairs of the Institute for some years. He had been a member of the Committee since 1958 and had acted as Chairman from October 1963 to the time of his death.

* Members of the Financial Sub-Committee

REPORT OF THE DIRECTOR FOR THE SESSION 1964/65

ADMINISTRATION

Director: Professor W. F. Grimes, C.B.E., M.A., D.Litt., F.S.A., F.M.A. (*A.T.*)
Secretary and Registrar: E. Pyddoke, F.S.A.
Director's Secretary: Mrs. M. Hunt
Chief Clerk: Miss M. F. Varese
Senior Clerk: Miss H. I. Fuller

Staff matters

The death in January of Mr. M. B. Cookson, Lecturer in Archaeological Photography, robbed the Institute of a teacher who had been associated with it from its inception. Mr. Cookson's services to archaeology ranged widely; many beside his immediate colleagues benefited from his unselfish enthusiasm and devotion to his subject. No archaeologist, excavator or other, sought his help in vain.

The Director continued to serve as Chairman of the Council for British Archaeology Committees on Ancient Fields and on Industrial Archaeology, the London Topographical Society, the Finance and Administrative Committee of the Field Studies Council, and the Faculty of Archaeology, History and Letters of the British School at Rome. He continued to act as Honorary Treasurer of the Council for British Archaeology. In October, 1964 he was appointed a member of the Royal Commission on Historical Monuments (England), and he represented the University on the Roman and Mediaeval London Excavation Council.

Professor G. W. Dimbleby took up his appointment as Professor of Human Environment in October, 1964. In June he was invited to attend the Radiocarbon and Tritium Dating Conference in Pullman, Washington, at which he presented a paper.

Professor Evans continued to serve on the Councils of the Prehistoric Society (as Vice-President) and the Royal Anthropological Institute, and as a member of the Managing Committee of the British School at Athens and the Advisory Committee of the Horniman Museum.

Mr. James Mellaart took up his appointment at the beginning of the Session as part-time Lecturer in Anatolian Archaeology. In March he delivered the Reckitt Lecture to the British Academy, taking as his subject 'Catal Hüyük: a Neolithic City in Anatolia'.

Dr. F. R. Hodson was made a Recognised Teacher in October, 1964. He was elected a Fellow of the Society of Antiquaries in March, 1965. He represented the Institute at the Ogam Conference at Saarbrüchen in September. He also served on the Council of the Prehistoric Society.

**A.T.* Appointed Teacher, *R.T.* Recognised Teacher of the University of London, throughout.

INSTITUTE OF ARCHAEOLOGY

Visiting Scholars

Among scholars who visited the Institute and gave seminars to students were Mr. Don Crabtree (America), Mr. Ian Morrison (University of Edinburgh), Professor Berciu (Bucharest) and Miss Moyta (Brazilia).

Public Lectures and Exhibitions

Professor G. W. Dimbleby delivered an Inaugural Lecture in the Summer Term, taking as his subject 'Environmental Studies and Archaeology'.

During the Summer Term the Special University Lectures were given by Professor I. Bernal, the subjects being, under the general title of 'Three Cities of Ancient Mexico', 'Teotihuacan, First Metropolis of the Highlands', 'Monte Alban, and the Zapotec World', and 'Tenochtitlan and the Aztec Empire'. Attendances averaged 103.

A total of 17 public lectures was given during the session, dealing with many aspects of archaeology. Attendances averaged 79. Apart from the speakers referred to above, lecturers included Emir Maurice Chehab (Director-General of Antiquities, Lebanon), Professor Dr. Anders Hagen (University of Bergen), Dr. D. J. Smith (Museum of Antiquities, Newcastle University), Dr. M. V. Seton-Williams, Professor E. Akurgal (Ankara University), Mr. P. W. Gathercole (University of Otago, Dunedin), Professor J. D. Evans and Mr. A. C. Renfrew (University of Cambridge) (in collaboration with the British School of Archaeology at Athens), Dr. B. S. J. Isserlin (University of Leeds), Dr. E. O. Negahban (Teheran), Dr. Fülep Ferenc (National Museum of Hungary) and Mr. H. N. Chittick (British Institute of History and Archaeology in East Africa).

In October an exhibition of Norwegian Rock Carvings was staged in the Entrance Hall with the co-operation of the Norwegian Office of Cultural Relations. In November there was an exhibition of drawings by Mr. D. S. Neal of the Ministry of Public Building and Works of Roman mosaics from British sites. Professor Hagen's and Dr. Smith's lectures referred to above were linked with these exhibitions. In March an exhibition of photographs taken by the late Mr. M. B. Cookson illustrating the excavation at Motya, Sicily was staged at the time of the public lecture given by Dr. B. S. J. Isserlin and as a memorial to Mr. Cookson's work. At the end of the session there was the usual small exhibition of students' photographic work.

The Institute continued to co-operate with the Extra-Mural Department in teaching for the University Extension Diploma in Archaeology. Several of the courses were again held in the building and among the lecturers were two members of staff, Miss J. M. Sheldon and Mr. B. M. Beeby, and past students Dr. M. V. Seton Williams, Miss E. Horrocks, Dr. G. Wainwright, Mr. J. L. Williams and Mr. G. Jarvis. The Director and Miss Barbara Parker again acted as External Examiners.

REPORT OF THE DIRECTOR FOR THE SESSION 1964/65

Students

The total number of students registered at the Institute during the session was 126; in addition 68 Intercollegiate students attended courses. Institute students included 30 who were registered for Diplomas (1 part-time), 45 for Higher Degrees (8 part-time), 2 (both part-time) for Special Research under Statute 21 (iii), 20 for the Course in Archaeological Conservation (2 part-time) and 7 for the Course in the Conservation of Historical Monuments (of whom 3 were Occasional students). One full-time Occasional student and 17 Occasional students attended lectures and used the facilities of the Institute.

Six students were awarded the Diploma in European Archaeology (Section B1: Iron Age and Roman Provinces) (one with Distinction); one the Diploma in European Archaeology (Section B2: Western Europe: The British Isles in the Anglo-Saxon Period), one the Diploma in Prehistoric Archaeology, and one the Diploma in Indian Archaeology (with Distinction).

Of the 45 Higher Degree students, 18 were registered for the Ph.D. full-time (3 in the Faculty of Science) and 3 part-time. Eighteen were registered for the M.A. full-time and 5 part-time and one was registered for the M.Sc. Three Ph.D.s were awarded: to Mr. P. L. Prematilleke (Indian Department) and Mr. G. C. Naylor (Prehistoric Department) in October, and to Mr. T. A. L. W. Madhloom (Western Asiatic Department) in November. M.A.s were awarded to three students in the Western Asiatic Department, Mr. A. A-K. Hadidi in January, and Mr. A. Q. Al-Tikriti and Mr. J. E. Wootton in June.

Nine students qualified for the Institute's internal Diploma in Conservation (five with Distinction) and 1 for the internal Diploma in the Conservation of Historical Monuments.

The following overseas countries were represented among students registered at the Institute: Belgium, 2; Canada, 3; Ceylon, 3; Germany, 1; Ghana, 1; Greece, 3; Holland, 3; India, 6; Iraq, 2; Jamaica, 1; Jordan, 2; New Zealand, 3; Nigeria, 3; Portugal, 1; Sweden, 1; Trinidad, 1; U.S.A. 12; Yugoslavia, 1; Zambia, 1.

Gordon Childe Prize and Bequest Fund

Gordon Childe Prizes for 1964/65 were awarded to Mr. M. W. C. Hassall, who obtained the Post-graduate Academic Diploma in the Archaeology of the Iron Age and the Roman Provinces with Distinction, and to Mr. S. Deraniyagala, who obtained the Post-graduate Academic Diploma in the Archaeology of India, also with Distinction.

Grants from the Bequest Fund were made to Mr. J. Mellaart towards the cost of excavating at Catal Hüyük; to Professor Lloyd for the expedition to Urartu which

he undertook during the summer vacation; to Miss J. du Plat Taylor to help establish a Research Unit in Underwater Archaeology; to Dr. Waechter to enable a training school in underwater archaeology techniques to be set up in Swanage; and to Professor Evans to assist him to continue his work at Saliagos.

Margary Fund

Thirteen grants were made to students travelling to and in France, Greece, Palestine, Russia, Scandinavia and Turkey.

TRAINING AND RESEARCH

Institute Field Course

It was not possible owing to administrative difficulties to hold the course during the session. It is intended to resume the field course in 1966.

Motya

The investigation of this site as a project shared by the Institute and the Department of Semitic Languages of the University of Leeds is now in its final stages. In preparation for the final report the Librarian took a small party, consisting of two surveyors and a Conservation student to the island during the Easter Vacation to complete surveys and to study and treat the pottery from the previous seasons' work.

Dr. Isserlin of Leeds conducted a short season of excavations in July to clarify a few outstanding problems.

Underwater Research Group

During the winter a group which included five Institute students took a bath training course for divers under the direction of Mr. Brian Booth, National Coach of the British Subaqua Club. Four of these subsequently attended the school of Underwater Archaeology at Swanage. As a result an Institute Underwater Research Group to interest students in this aspect of archaeology has now been formed. One talk was given to the Group by Mr. Robert Wheeler of Minnesota Historical Society on underwater research in the rivers of America. Mr. Robin Barbary, leader of the Group, joined, as archaeological member, the Oxford University Underwater Expedition to Malta in the long vacation. During his time there Mr. Barbary endeavoured to co-ordinate various underwater projects and discoveries made in the island, and to prepare a report, in collaboration with the Department of Antiquities, on the discoveries as a pioneer project for surveying the underwater archaeology of a specific area. This was made possible by a donation of £100 from Mr. J. E. Jurrianse to the Group for special equipment and towards Mr. Barbary's expenses in Malta.

THE DEPARTMENTS

The Director's general introductory course on archaeology was attended by 22 intercollegiate students.

He continued work on the results of his excavations in the City of London and directed the excavation of features there which were not available when the main campaign was held, as well as acting as consultant on the preservation of London Wall and other structures in the City. On behalf of the Ministry of Public Building and Works he directed the excavation of a Bronze Age round barrow in Pembrokeshire, which was threatened with destruction.

He also gave a number of lectures to archaeological societies.

Publications:

By Professor Grimes:

'Excavations in the Lake Group of Barrows, Wilsford, Wiltshire', Institute of Archaeology *Bulletin* No. 4 (1964), 89–121.

'Wales and Ireland in Prehistoric Times: some meditations' (*Presidential Address*), *Archaeologia Cambrensis*, CXIII (1964), 1–15.

'Neolithic Wales', in Foster & Daniel (ed.), *Prehistoric and Early Wales* (Routledge, 1965), 35–69.

'The Archaeology of the Stamford Region' in Rogers (ed.), *The Making of Stamford* (Leicester U.P., 1965), 1–14.

HUMAN ENVIRONMENT

Professor: G. W. Dimbleby, B.Sc., M.A., D.Phil. (Oxon) (*A.T.*)
Reader: I. W. Cornwall, Ph.D. (*A.T.*)
Assistant: Miss J. M. Sheldon
Technician: P. Porter
Honorary Assistant: Mrs. M. Barton

The number of students working in the Department during the year was 10, 5 being registered for the Ph.D., 1 for the M.Sc., 3 for the M.A. and 1 for research under Statute 21 (iii).

Of the Higher Degree students, 5 were registered in the Faculty of Science and 4 in the Faculty of Arts. They worked on the following subjects during the session:

Ph.D.

C. Banks, Mrs. (*née* Grigson) (Faculty of Science): Prehistoric cattle remains from Europe and India.

J. G. Evans (Faculty of Science): Land and fresh-water mollusca from Post-glacial sediments.

D. Mathewson (Faculty of Arts): Weathering processes on archaeological objects.
G. Naylor (Faculty of Science): Palaeoclimatology.

M.Sc.

S. Limbrey, Miss: A study of the effect of climatic differences on soil formation on basalt in the Canary Islands and the British Isles.

M.A.

A. Akeroyd, Miss: Sea-levels in relation to archaeological sites in Southern Britain.
M. A. B. Harlow (*part-time*); Environmental aspects of North African rock-drawings.
M. J. Tamplin: Middle Thames brickearths.

Statute 21 (*iii*)

B. Westley, Mrs. (*part-time*); Faunas from archaeological sites.

Mr. Naylor presented his thesis, entitled 'A meteorological approach to Pleistocene Geochronology and a consequent stratigraphical and pedological synthesis which includes data derived from field work in Morocco and the Canary Islands', and was awarded the Ph.D.

As a result of changes instituted last year, reorganisation of the courses in Human Environment is being undertaken. The whole tenor of the teaching is now on a broad ecological basis, and the important chronological aspects of environmental studies are being taught within this framework. This has entailed a great deal of preparation, and special courses had to be provided for the second year students in this transition period. Consequently, research work has been limited to *ad hoc* investigation. During the year equipment for pollen analysis and other botanical studies has been acquired, and Mr. Porter has joined the department as Technician.

Both Professor Dimbleby and Dr. Cornwall continued their work on the British Association Committee on Field Experiments. Miss J. T. Philips and Mrs. B. Westley also took part in the excavations.

At the end of June the department ran a three-day field course in environmental studies, based on Salisbury. Grateful acknowledgment is made of the help given by members of the Nature Conservancy during this course.

A number of outside lectures was given by both Professor Dimbleby and Dr. Cornwall. Professor Dimbleby took part in 'Advance', a series of educational broadcasts on B.B.C. television. Dr. Cornwall gave a talk on 'Man the Hunter' in the General Overseas Service of the B.B.C.

Publications;

By Professor Dimbleby:

'Post-glacial changes in soil profiles', *Proc. Roy. Soc. B.*, 161 (1965), 355–362.

'Early Agriculture in the New Forest', *Advancement of Science*, 22 (1965), 88–97 (with C. R. Tubbs).

'Overton Down Experimental Earthwork', *Antiquity* 39 (1965), 134–6.

'The Origin and Use of Heath Soils', *J. Soil Assoc.*, 13, Part I (1965), 472–477; Part II (1965), 569–575.

'Environmental Studies and Archaeology', *Inaugural Lecture*, Institute of Archaeology, 1965.

By Dr. Cornwall:

'Thin sections of British Neolithic pottery', Institute of Archaeology *Bulletin* 4 (1964), 29–33 (with H. W. M. Hodges).

'A contribution to a new datum for the prehistory of the Thames Valley', Institute of Archaeology *Bulletin* 4 (1964), 223–232 (with S. W. Wooldridge).

INDIAN ARCHAEOLOGY

Professor: K. de B. Codrington, M.A. (*A.T.*).

One student, Mr. S. Deraniyagala, was registered for the Post-graduate Academic Diploma, which he was awarded with a mark of Distinction.

Six students were registered for higher degrees as follows:—

Ph.D.

P. M. Prematilleke (Faculty of Arts): Sinhalese Sculpture of the Anuradhapura Period.

M. L. Nigam (Faculty of Arts): The Antiquities of Bundelkhand.

T. C. Sharma (Faculty of Arts): Prehistoric archaeology of Assam (A study of neolithic cultures).

I. A. R. Naik (Faculty of Arts): The Culture of the Nilgiri Graves with its catalogue collection at the British Museum.

H. A. Ratnayake (Faculty of Arts) (*part-time*); Arts and Crafts of Ceylon.

(The supervision of the work of this student was shared with Mr. H. W. M. Hodges).

M.A.

S. W. Hatwal (*part-time*); The Palaeography of Brahmi inscriptions.

Of these, Mr. Prematilleke presented his thesis and was awarded the Ph.D. degree.

During the long vacation Professor Codrington visited Ceylon, where the University B.A. syllabus was agreed and a programme of field-work discussed. Later he went to New Delhi for discussions as a guest of the Government of India and spent a month at Ajanta and Ellora.

Publications:

By Professor Codrington:
'The Origins of Coinage', Institute of Archaeology *Bulletin* 4 (1964), 1–24.
'Art for Archaeologists', Rylands Library *Bulletin* (1965), 98–117.

PREHISTORIC EUROPEAN ARCHAEOLOGY

Professor: J. D. Evans, M.A., Ph.D., F.S.A. (*A.T.*)
Lecturers: F. R. Hodson, M.A., Ph.D., F.S.A. (*R.T.*)
J. d'A. Waechter, M.A., Ph.D., F.S.A. (*R.T.*)
Special Lecturer in Central and East European Archaeology: T. Suilimirski, Iur.D., Ph.D. (Lwow), Hon. F.S.A.
Honorary Assistant: Mrs. G. Pike, M.A.

Six full-time students were registered at the beginning of the Session, all of whom were in their first year. Of the first-year students who had been registered for the Diploma in the previous Session, three were allowed to transfer to the M.A. degree and one withdrew. There were also two full-time occasional students.

Eighteen students were registered for Higher Degrees as follows:

Ph.D.

D. C. Biernoff (Faculty of Arts): Painted pottery Neolithic Cultures of Greece and West Anatolia.

D. Britton (*part-time*) (Faculty of Arts): Some aspects of the metal industry in Prehistoric Europe, especially in Britain.

C. Gallis (Faculty of Arts): Title to be agreed.

G. Pike, Mrs. (Faculty of Arts): Art of the Megalithic Passage Graves.

G. Watling, Mrs. (*née* Putt) (Faculty of Arts): The Late Bronze Age in Southern England.

B. Rosselló, Mrs. (Faculty of Arts): Geographical and Chronological Distribution of Signs in Palaeolithic Art, and their Significance.

G. Rosselló (Faculty of Arts): The Chronology of Early Balearic Island Cultures.

J. Williams (Faculty of Arts): A petrological study of the prehistoric pottery of the Aeolian Islands with special reference to the stratigraphical sequence.
(The supervision of the work of this student was shared with Dr. I. W. Cornwall)

M.A.

M. B. Bender, Miss: Title to be agreed.

I. M. Davies, Miss: Patterns of prehistoric trade in the British Isles from the Neolithic to the Early Iron Age, with special reference to trade in jet and lignite.

I. Haglund, Miss: Aspects of the Archaeology of Scandinavia in the Neolithic and Bronze Ages.

C. G. Hunt: Title to be agreed.
R. B. Land (*part-time*): Oceanic: Polynesian (Maori) Culture sequence.
F. F. Petersen: Some aspects of the Rinyo-Clacton culture and its relations to other British Neolithic cultures.
W. W. Phelps: Southern Greece in the Early Bronze Age.
V. N. Rana-Sisodia: Title to be agreed.
B. Wai-Ogosu: Title to be agreed.

Professor Evans acted as External Examiner for the Queen's University, Belfast. In July and August he again excavated, in collaboration with Mr. A. C. Renfrew, at the Neolithic site of Saliagos, Antiparos. He gave a number of outside lectures in the course of the year.

Dr. Hodson continued work on the preparation for publication of the material from Münsingen in the Berne Museum. He acted as External Examiner for the Preliminary and Tripos examination in Archaeology and Anthropology at Cambridge.

During the Spring and Summer Dr. Waechter took part in organising and running courses in Underwater Surveying and Recording at Swanage, Dorset, a project run jointly by the Institute of Archaeology and the British Sub-Aqua Club and attended by members of both.

Dr. Sulimirski organised a five-week tour of Russian Museums and archaeological sites for staff and students of this, and other, Universities.

Publications:

By Professor Evans:

'Excavations in the Neolithic *tell* of Knossos, 1958–60', Institute of Archaeology *Bulletin* 4 (1964), 34–60.

'Excavations in the Neolithic Settlement of Knossos, 1957–1960 Part I' *Annual of the British School at Athens*, 59 (1964), 132–240.

Various reviews.

By Dr. Hodson:

'Cultural Grouping within the British pre-Roman Iron Age', *Proceedings of the Prehistoric Society*, XXX (1964), 99–110.

'La Tène Chronology, Continental and British', Institute of Archaeology *Bulletin* 4 (1964), 123–141.

'Quelques problèmes de la classification de l'Age de Fer dans les Iles Britanniques', *Celticum*, IX (1964), 1–8.

Various reviews.

By Dr. Waechter:

'A Preliminary Report on Four Epi-Levalloisian Sites', *Contributions to the Prehistory of Nubia*, 4 (1965), 121–145.

'Excavations at Gorham's Cave, Gibraltar, 1951–54', Institute of Archaeology *Bulletin* 4 (1964), 189–222.

By Dr. Sulimirski:

'Barrow-grave 6 at Komarów', Institute of Archaeology *Bulletin* 4 (1964), 171–188.

'Tripolyan Notes', *Proceedings of the Prehistoric Society* XXX (1964), 56–65.

'De Vergeten Sarmaten'. *Verzonken Beschvingen.* (1963), 279–298.

'I Sarmati Dimenticati; un popolo che fu potentate, disseminato fra molte nazioni'. *Civiltà del Mistero*, (1963), 279-298.

'Archaeology USSR', *Chambers Encyclopaedia World Survey*, 1965, 72–75.

ARCHAEOLOGY OF THE ROMAN PROVINCES

Professor: S. S. Frere, M.A., V-P.S.A. (*A.T.*)

There were 15 students working in the Department, 11 of whom were registered for the Post-graduate Diploma, 1 for a full-time Higher Degree and 3 for part-time Higher Degrees. There was also 1 research student, 1 occasional student and 16 intercollegiates.

The following were reading for Higher Degrees:

Ph.D.

W. Manning (Faculty of Arts) (*part-time*): Objects of iron in Roman Britain.

M.A.

H. F. Cleere (*part-time*): The iron industry of Roman Britain.
K. S. Painter (*part-time*): Roman glass.
S. E. Ramsden, Miss: Roman mosaics in Greece.

During the year Diplomas were awarded to Miss M. P. Owers, Miss J. E. Mellor, Mr. R. A. Canham, Mr. M. W. C. Hassall, Mr. M. E. Henig and Mr. H. C. Lane. Mr. Hassall was awarded a distinction.

Regular courses of lectures have been given on Roman Britain and the Western Empire. The former were attended by a total of 16 intercollegiate students.

Work has continued within the Department on the restoration of wall plaster from Verulamium and the Bignor Villa; the card index of Celtic coins; and the card index of Romano-British art and objects. Professor Frere directed a three-week excavation at the Iron Age Hill Fort at Ivinghoe Beacon, Bucks and carried out a week's field work in Wales with Dr. J. K. St. Joseph.

Professor Frere acted as external examiner in archaeology at Leicester University.

The Professor also gave a number of outside lectures.

REPORT OF THE DIRECTOR FOR THE SESSION 1964/65

Publications:

By Professor Frere:

'Verulamium—Then and Now', Institute of Archaeology *Bulletin* 4 (1964), 61–82.

(edited) Callender, *Roman Amphorae*, O.U.P. 1965, 323 pp.

Various reviews.

WESTERN ASIATIC ARCHAEOLOGY

Professor: Seton Lloyd, C.B.E., M.A., F.B.A., F.S.A., A.R.I.B.A. (Retd.) (*A.T.*)

Lecturer in Mesopotamian Archaeology: Miss Barbara Parker, O.B.E., F.S.A.

Lecturer in Palestinian Archaeology: P. J. Parr, M.A., F.S.A.

Lecturer in Anatolian Archaeology: J. Mellaart, B.A., F.S.A.

Seminar in Metallurgy and Metal Typology: Mrs. K. R. Maxwell-Hyslop, F.S.A.

The number of full-time students in the Department was 17, of whom 7 were studying Mesopotamian, 2 Iranian, 7 Palestinian and 1 Anatolian Archaeology. Three students were reading for the Diploma in Mesopotamian, 6 for the Diploma in Palestinian and 1 for the Diploma in Anatolian Archaeology.

Students were registered for Higher Degrees as follows:

Ph.D. *Mesopotamia*

T. A. L. W. Madhloom (Faculty of Arts): The chronological development of Neo-Assyrian Art.

C. L. Goff, Miss (Faculty of Arts): New evidence of the Cultural development in Luristan in the late second and early first millennia B.C.

E. D. Caspers, Mrs. (Faculty of Arts): Ancient trade connections in the Persian Gulf.

M.A.

J. E. Wootton: Mesopotamian Art and Architecture from the Proto-Literate period to the third Dynasty of Ur.

G. E. Turner: Late Assyrian architecture.

A. Q. Al-Tikriti: Archaeological evidence for the Neolithic Revolution in the Near East.

M.A. *Palestine*

R. Dajani: The culture of eastern Jordan from the seventh to the first centuries B.C.

A. Hadidi: Eastern Jordan in the Hellenistic and Roman periods.

M.A. *Iran*

P. H. Razavi, Miss: Achaemenian art in the Western Provinces.

T. A. L. W. Madhloom submitted his thesis and obtained his Doctorate in November, 1964. J. E. Wootton, A. Q. Al-Tikriti and A. Hadidi were awarded M.A. degrees in June, 1965.

Tutorials were given for students studying the Akkadian, Sumerian, Hebrew and Arabic languages at the School of Oriental and African Studies.

Under the auspices of the British Institute of Archaeology at Ankara Professor Lloyd carried out, during the summer vacation, a first season's excavation of the Urartian fortress-city now known as Kayalidere, in eastern Turkey. Mr. Parr continued his excavations at Petra under the auspices of the British School in Jerusalem and the Jordanian Government. Mr. Mellaart continued his excavations at Catal Hüyük, near Konya in Turkey. Mrs. Maxwell-Hyslop was again awarded a grant from the Oxford Near Eastern Fellowship Fund to continue her work on Western Asiatic gold jewellery. She worked in Istanbul, Ankara and Nikoçia.

Publications:

By Professor Lloyd:

Beycesultan Vol. II (in collaboration with James Mellaart), British Institute of Archaeology at Ankara, 1965, 158 pp.

'History of Western Art' (film-strip with commentary), Section II: *Mesopotamian Art*, Visual Publications Ltd., 1965, 66 pp.

Various reviews.

By Mr. Parr:

'The Beginnings of Hellenisation at Petra', *La Rayonnement des Civilisations Grecque et Romaine sur les Cultures Périphériques* (8th International Congress of Classical Archaeology), Paris, 1965, 527–533.

'Objects from Thaj in the British Museum', *Bulletin American Schools of Oriental Research*, 176 (1964), 20–28.

By Mr. Mellaart:

'Excavations at Catal Hüyük, 1963. Third Preliminary Report', *Anatolian Studies* XIV (1964), 40–119.

Earliest Civilisation of the Near East, Thames and Hudson, London, 1965, 143 pp.

Beycesultan Vol. II (in collaboration with Seton Lloyd) British Institute of Archaeology at Ankara, 1965, 158 pp.

By Mrs. Maxwell-Hyslop:

'Western Asiatic Jewellery', *Encyclopaedia Britannica*, 1965.

DRAWING AND SURVEYING

Lecturer: H. M. Stewart, B.A.

The number of students attending courses was:

Drawing: 28 (14 Diploma, 9 Conservation, 1 Higher Degree, 4 Occasional);
Surveying: 25 (13 Diploma, 8 Conservation, 4 Occasional).

The lecturer also conducted two courses, each of 6 lectures, in surveying and one class in drawing for the Department of Extra-mural Studies, University of London, as well as a course in surveying of one week's duration for the Department of Extra-mural Studies, Cambridge.

Publications:

By Mr. Stewart:

'Egyptian Funerary Statuettes and the Solar Cult', Institute of Archaeology *Bulletin* 4 (1964), 165–170.

PHOTOGRAPHY

Lecturer: M. B. Cookson (deceased 3rd January, 1965)

Assistant: Mrs. M. V. Conlon

Owing to the death of Mr. Cookson at the end of the first term, Mrs. Conlon took charge of the Department for the remainder of the session.

Twenty-two students took photography courses, 11 Diploma and 11 Conservation, of whom 3 had elected to continue photography in their second year. Additional equipment enabled Diploma students to undertake more practical work. The programme for Conservation students included photography of the various stages of the restoration-work with which they were dealing.

Items of new equipment included two Exa 35 mm. cameras, a Gandolphi 5 x 4 camera, a Gnome enlarger and other enlarging and photoflood equipment.

2,189 prints and enlargements and 349 lantern slides were produced during the year.

Publications:

By Mr. Cookson:

'The Photographic Department of the Institute', Institute of Archaeology *Bulletin* 4 (1964), 25–28.

CONSERVATION

Senior Lecturer-in-Charge: Miss Ione Gedye, B.A., F.I.I.C.

Senior Lecturer: H. W. M. Hodges, F.I.I.C. (*R.T.*)

Technician: A. Marshall

Sixty-four internal students attended courses in the Department, of whom 20 followed the Conservation Course, 9 being in their second year and 2 part-time. The remainder were Diploma and Higher Degree students. Pressure on the limited number of places for students continues to be high.

Visitors who came to study special topics included:

Miss H. Lechtman (University of New York): Techniques of casting

Mr. Balin (Turkey): Restoration of pottery
Miss Moyta (Brazilia): Conservation of bronzes

As in previous years work of instructional value to students was undertaken for a number of museums and excavations.

The Gulbenkian Grant to study methods of removing the paint layers of wall paintings which was being held pending a suitable applicant has been awarded to the Institute to enable Miss Pamela Pratt to go to Rome in the autumn of 1965.

The Department's thanks are again due to Dr. A. E. Werner, Keeper of the Research Laboratory of the British Museum, for continued help; to Mr. S. Rees Jones of the Courtauld Institute for instructing second-year students in the technology of painting materials; to Mr. Baines-Cope of the Research Laboratory for instruction in the technology, decay and conservation of paper and to Mr. A. Rixon of the Palaeontology Department of the Natural History Museum for showing the work of his department to second-year students.

Mr. W. Ambrose, Miss J. Bagenal, Mr. J. Cross, Miss T. Martin, Mrs. B. Onwuejeojwu, Miss P. Pratt, Miss A. Stoves, Miss F. von Vacano and Miss S. Walston obtained the Diploma in Conservation. Mr. Ambrose, Mr. Cross, Miss Pratt, Miss Stoves and Miss von Vacano were awarded distinction.

Miss Gedye and Mr. Hodges again lectured on the conservation and examination of pottery for an Extra-Mural course, and with Mr. Marshall participated in the Museums Association's Curatorial Course which was directed by Mr. Hodges.

Mr. Hodges supervised the equipping of the new laboratory in the Hittite Museum at Ankara and also visited a number of excavations in Turkey and Greece to advise on problems of conservation.

Mr. Hodges also took part in 'Advance', a series of educational broadcasts on B.B.C. television. As Secretary to Section H of the British Association, he took over the duties of the Recorder at the Cambridge Meeting.

Miss Gedye and Mr. Hodges continued as Secretary and Treasurer of the United Kingdom Group of the International Institute for Conservation and with their work as abstractors of the technical literature of art and archaeology for the International Institute for Conservation.

Students from the department provided technical services during the vacation periods at, in this country, Winchester and Mildenhall and, overseas, in Denmark (Copenhagen), Turkey (Catal Hüyük), Greece (Antiparos) and Sicily (Motya); several have been engaged on a temporary basis for conservation or technical work in various departments of the British Museum, at the British School at Rome, at Baghdad and at Jerusalem.

REPORT OF THE DIRECTOR FOR THE SESSION 1964/65

Publications:

By Miss Gedye and Mr. Hodges:

'The Teaching of Archaeological Conservation', Institute of Archaeology *Bulletin* 4 (1964), 83–88.

By Mr. Hodges (in collaboration with Dr. Cornwall)

'Thin Sections of British Neolithic Pottery: Windmill Hill—A Test-Site', Institute of Archaeology *Bulletin* 4 (1964), 29–33.

CONSERVATION OF HISTORICAL MONUMENTS

Lecturer-in-Charge: (*part time*) W. A. Eden, M.A., F.S.A., F.R.I.B.A. (Theory of Architecture. The Law relating to Ancient Monuments and Historic Buildings)

Lecturers: (*part-time*) H. M. Colvin, M.A., Hon. A.R.I.B.A. (Documentary Sources for the History of Architecture in England)
Mrs. M. P. G. Draper, B.A., F.S.A. (Palaeography)
S. E. Dykes Bower, M.A., F.S.A., F.R.I.B.A. (Diagnosis and Treatment of Structural Faults in Buildings)
R. G. Gilyard-Beer, M.A., F.S.A. (English Architecture, 597–1540).
Sir John Summerson, B.A., F.B.A., F.S.A., A.R.I.B.A. (English Architecture, 1540–1840)
R. G. Wood, A.R.I.B.A. (Diagnosis and Treatment of Structural Faults in Buildings)

There were 5 students registered in the Department, 3 of whom (2 first-year and one second-year) were following the Diploma course, and 2 attending lecture courses only in the following subjects: English Architecture I and II; Documentary Sources for the History of Architecture in England, I and II; the Law relating to Ancient Monuments and Historic Buildings; and Theory of Architecture. There was one candidate for the Diploma in the Conservation of Historical Monuments, who was awarded the Diploma.

Visits were arranged during the session to the following buildings:—the Cathedral and Bishop's Palace, Lincoln; St. John's College and Magdalene College, Cambridge; Pembroke College, Christ Church, the Queen's College and Trinity College, Oxford.

The adaptation of Manresa (Parkstead) House, Roehampton for use as a training college was continued (and the restoration of Marble Hill House, Twickenham was begun), under the direction of the Lecturer-in-Charge. Mrs. Draper completed her work on the Parish of St. Ann's, Soho, for the *Survey of London*.

INSTITUTE OF ARCHAEOLOGY

LIBRARY

Librarian: Miss J. du Plat Taylor, F.S.A.
Assistant Librarian: Miss G. Talbot, M.A., A.L.A.
Chief Library Assistant: Mr. B. M. Beeby, M.A.
Collections Clerk: Miss J. Philips, B.A.

Mr. B. M. Beeby took up his duties as Chief Library Assistant on September 1st, 1964. He was confirmed in the appointment in June, 1965.

With this additional help, the remainder of the first selection of Professor Childe's pamphlets was accessed, as well as all the books and periodicals acquired from Professor Zeuner's library. A revision of the Subject Index was begun. Library staff meetings were held each term to discuss plans and methods. A photo-copier was obtained for staff and student use.

The library was fully used, although fewer books were borrowed. The late-opening evenings were well supported and are now a permanent arrangement. A student librarian, Mrs. Theresa King, again attended for practical training during September, 1965.

During the summer vacation the Assistant Librarian attended Dr. Kenyon's excavations in Jerusalem.

Mr. Rodney Land was employed part-time throughout the year on the revision of the Lantern Slide collection.

Publications:

By Miss Taylor:

(edited for Confédération Mondiale des Activités Subacquatiques) *Marine Archaeology*, Hutchinsons, 1965, 208 pp.

'Motya, a Phoenician trading Settlement in Sicily', *Archaeology*, 17 (1964), 91–100.

The following is a summary of the additions made during the year:

Books		818	*Pamphlets*		537
Exchanged	87		Exchanged	53	
Presented	140		Presented	383	
Purchased	591		Purchased	101	
Periodicals		509			
Volumes bound		277	*Lantern slides*		91

Volumes lent totalled 4,133, the highest month being October (581), the lowest August (113). 46 works were borrowed from outside libraries and 18 lent.

REPORT OF THE DIRECTOR FOR THE SESSION 1964/65

The following have presented books, periodicals and pamphlets:—

Dr. P. G. Adamson; Aden Department of Antiquities; Dr. J. Alexander; Dr. B. Allchin; Professor M. Almagro; Dr. E. Anati; Mrs. Anderson; F. R. Annable; Society of Antiquaries of London; A. M. ApSimon; Aramco; Australian Institute of Aboriginal Studies; B. P. Belgium; Barcelona, Museo Arqueologico; B. M. Beeby; Lady Briscoe; British School of Archaeology in Jerusalem; Dr. J. J. Butler; G. F. Carter; Miss E. Cartwright; Dr. F. Celoria; G. Charrière; Gordon Childe bequest; Mrs. Christie; CIBA; Professor J. Desmond Clark; Professor K. de B. Codrington; Dr. I. W. Cornwall; Council of Ironfoundry Associations; Dr. J. D. Cowen; I. M. Crawford; Miss A. Croome; R. Cunliff-Shaw; Cyprus Department of Antiquities; Professor P. E. P. Deraniyagala; A. P. Detsicas; Professor G. W. Dimbleby; Editor of *Discovery*; Editor of *Endeavour*; Professor J. D. Evans; W. A. Evans; Dr. Per Fett; Dr. Henry Field; A. Flinder; Professor S. S. Frere; R. Herrera Fritot; R. Gallant; P. and M. Garlake; P. Gathercole; Miss I. Gedye; Professor W. F. Grimes; A. E. Günther; Dr. D. B. Harden; Dr. H. Helbaek; Dr. E. S. Higgs; H. W. M. Hodges; Dr. F. R. Hodson; Mrs. Vera Hollander; Israeli Embassy; Dr. B. S. J. Isserlin; Mrs. G. James; D. Kaye; Dr. K. M. Kenyon; A. D. Lacaille; Winifred Lamb Bequest; Dr. Lang; London University Library; Dr. I. H. Longworth; Dr. F. D. McCarthy; Dr. T. Madhloom; Magna Carta Commission of Virginia; T. G. Manby; A. Marshack; J. V. S. Megaw; J. H. Money; Moscow, Academy of Sciences of U.S.S.R.; K. Nicolaou; Dr. K. P. Oakley; Olomouc University; P. J. Parr; D. Philips; E. Pyddoke; Mrs. Rodnight; B. and G. Rosselló; Dr. J. R. dos Santos Junior; Société de Prèhistoire du Nord; H. Stewart; Professor T. Sulimirski; Miss G. C. Talbot; M. J. Tamplin; Miss J. du P. Taylor; Miss G. W. Thompson; United States Information Agency; University College, London; Professor J. D. van der Waals; G. T. Warwick; Dr. J. Waechter; Miss A. C. Western; Sir Mortimer Wheeler; J. Ll. Williams; Woodchester Roman Pavement Committee.

INSTITUTE OF ARCHAEOLOGY

STUDENTS' APPOINTMENTS

Mr. W. Ambrose was appointed conservation officer in the Department of Anthropology, Australian National University, Canberra.

Mr. R. A. Canham was given a temporary appointment as archaeological assistant at Reading Museum.

Mrs. R. A. Canham (*née* Owers) was appointed Assistant Curator at Kingston Museum.

Mr. J. Cross was appointed conservation officer for the Area Museum Council for the South-West.

Mr. S. Harris was appointed conservation officer to the Bristol City Museum.

Mr. M. E. Henig was appointed to the staff of the Guildhall Museum, London.

Miss G. Joysmith was appointed Assistant Conservation Officer in the Victoria and Albert Museum.

Mrs. H. Lane (*née* Williams) was promoted to be Head of the Conservation Department in the British Museum Research Laboratory.

Miss M. McGregor has been promoted Conservation officer in the Western Asiatic Department of the British Museum.

Miss A. Madeira was appointed conservator to the Peabody Museum expedition to Guatemala.

Dr. T. A. L. W. Madhloom received an appointment in the Iraq Government Directorate General of Antiquities.

Miss T. Martin was appointed conservation officer to the Birmingham City Museum.

Miss J. E. Mellor was appointed Excavations Assistant to the Leicester Museums with responsibility for the Leicester excavations.

Miss A. Searight was appointed to direct the Conservation Laboratory in Ankara.

Miss F. von Vacano was appointed conservation officer in the Department of Archaeology, University of Munich.

Miss M. White was appointed Conservation Officer to Winchester City Museum.

Mr. J. E. Wootton was appointed Annual Fellow by the British School of Archaeology in Iraq.